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**CURRENT
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The Control of Inflation*

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ALTHOUGH A SERIES of anti-inflation measures were put into effect by the Federal government during the last months of 1950, it was clear as 1951 began that further measures would have to be taken if inflationary pressures were to be checked. The Federal expenditure plans presented in the President's budget message indicated that the forces which had brought inflation during the last half of 1950 would be operating with doubled power by the last half of 1951; but the measures so far taken were hardly adequate to hold in check the lesser pressures which had developed in 1950. In anticipation of price controls, prices leaped upward during January.

On January 26, general controls on prices and wages were established. A few days later, the President asked Congress for \$10 billion of additional taxation quickly, and warned that he would have to recommend a still further addition of perhaps \$6.5 billion.¹ On February 5, Secretary of the Treasury Snyder presented the details of the tax recommendations.

If these tax recommendations, including the installment still to come, are enacted in full by Congress — as recommended or with alterations which do not weaken the program — the ac-

tion may be sufficient. Certainly lesser action will not be. The impact of acts taken or recommended to date, and their chances for success, cannot be understood until the underlying causes of the inflation we are experiencing have been considered.

The Current Inflation and Its Causes

In the absence of direct controls, the consumer encounters inflation in the form of increased price tags on almost everything he buys. He is apt to ascribe those increased price tags to two causes: profiteering, and increases in costs which force — or at least encourage — the manufacturer and the storekeeper to mark up their prices.

This explanation is not entirely wrong, but it is certainly superficial. For the desire to make as large profits as possible is always in operation. It is in the nature of the free enterprise system that most producers and dealers sell their goods and services at all times for prices as high as they can get. Normally, however, a producer or dealer is restrained by the fact that if he charges too high a price his competitors will undersell him, and cut into his business.

The essence of an inflationary situation is that these restraints have disappeared. A retailer can increase prices and feel certain that the public will buy his goods anyway. A manufacturer faced with a wage demand prefers granting it to risking an interruption of production, for he knows he can

*The author is a consultant to the United States Treasury Department. The views expressed are his own and do not necessarily reflect those of the Department.

¹ Subject to change in amount as the size of the Federal budget for 1951-52 becomes more clearly known.

readily pass the cost on through a price increase. This change in the market is the new factor which has caused inflation. What brought it about? This is the question which needs explanation.

Inflation in 1950

The basic cause of inflation — last summer as on every previous occasion of inflation — was the readiness and even eagerness of all buyers combined to buy more goods and services than were available to be bought at existing prices. At a time when the economic system was already operating at almost full capacity, it became necessary to initiate greatly increased defense expenditures. Because time is required to get production on new orders rolling, the increase in output of materials and products for defense during the last half of 1950 was relatively small, but the initiation of increased defense production diverted raw materials from other uses. A number of producers purchased materials to enlarge their inventories, in preparation for increased production. Many others found it desirable to expand their plants, and increased use of materials for that purpose occurred.

These activities had two results. They diverted some materials from use in the production of goods for sale to consumers, and thereby decreased somewhat the amount of certain types of goods available to consumers. At the same time these activities led to increased employment and consequently increased the flow of income to consumers. Hence consumers had more income to spend, without a corresponding increase in the amount of goods available. Some consumers made the situa-

tion worse, by going on a buying spree caused by an unfounded fear, in the second half of 1950, of serious shortages, or by a more justified anticipation of later price rises.

As a result, many retailers and wholesalers found that they could sell all the goods of certain types they could obtain, at increased prices. Likewise, many manufacturers and raw materials producers found that they could sell all the goods they could produce, at increased prices. This was true of manufacturers who were selling to other business firms for construction purposes, or to the National Defense Establishment for military purposes, as well as of manufacturers who were selling to dealers for resale to consumers. Price increases accordingly resulted at all stages in production — raw materials production, manufacturing, wholesaling, and retailing.

In late 1950, a special circumstance probably accounted for some increases in both prices and wages — an anticipation that price controls might be imposed at a later date which led to a desire to get an increased price or wage into the records, as a base upon which controls would be placed. This motive almost certainly was the main cause of repeated marking up of prices in some grocery stores and other retail stores during January.

Inflationary Pressures in 1951

The forces which brought about this process in 1950 will be operating with increased strength in 1951. A continuing increase in purchases by the National Defense Establishment will occur because of programs already initiated and orders already placed. Large new

programs will be added. The President's budget message indicated that expenditures for the military services will rise from \$21 billion during the twelve months ending in June, 1951, to \$41 billion during the following twelve months, ending in June, 1952, and that total Federal spending will rise from \$47 billion to more than \$71 billion. This estimate is a preliminary one, based in part upon plans not yet completed, and is subject to considerable error, but it indicates the general magnitude of the increase to be expected. At the same time, business firms plan extensive added use of materials in 1951 to expand their plants.

This additional demand for goods will cause increased employment, longer hours of work, and an added flow of income to consumers. But the amount of goods and services available on the retail market will not increase. On the contrary, further diversion of some materials from civilian production to military production will be required. The increased employment and longer hours of work will be no more than enough to meet military production needs. Again, unless measures are taken to correct the situation, there will be a marked increase in consumer spending, without any increase in the amount of goods and services available.

As a result, unless effective anti-inflation measures are taken to support price and wage controls, tremendous inflationary pressure will be exerted on these controls and their maintenance will be subject to increasing difficulty.

The Inflationary Spiral

In the absence of price and wage controls we could expect to experience

a continuing increase in prices up the so-called inflationary spiral. Once begun, inflation feeds on itself. The increased prices charged by sellers result in increased revenues to them. These swell profits; corporate profits in the last half of 1950 were far above any previous level. They also swell other incomes; the employer whose revenues have increased meets demands upon him from his workers and suppliers by increasing wages and paying increased prices to his suppliers. The rise in incomes causes a further increase in demand; there is more spending than can be met with the goods available, even at the increased prices, and sellers raise prices further. This interaction causes incomes and spending to rise further also. The continuing upward march is called the inflationary spiral.

As has been suggested, prices are pushed up around this spiral by increasing costs, as well as pulled up by increasing spending. Wage increases are an important example. When the labor market is tight, a labor union may press for wage increases because living costs of its members have increased or are expected to increase, or because profits have swelled and union members feel that they should share in this increased income of their employer, or merely because the union feels that in the circumstances a wage increase can be obtained. The wage increase, if granted, may cause the employer to push up his prices more or sooner than he would otherwise do. Increases in raw materials prices, which are apt to occur before prices of finished goods rise, will have the same effect; they will tend to push prices up. With effective controls on wages and prices, we do not observe

inflation in the way just described. But the upward pressure is not removed by controls — instead, it is *suppressed*. This fact is discussed again later.

Increased Money Supply; Deficit Financing

Where do the funds to finance the increase in public and business spending which started the inflation come from? Usually, they come from the banking system, which typically has idle funds on hand, and which creates funds to meet demands upon it.² The creation of funds will occur in part to meet added business loans to finance expenditures for plant, equipment, and inventories, and partly to buy bonds which the Federal government issues to finance expenditures not covered by taxes.

Every major inflation in our history has been associated with a period of large Federal deficits. It has never been possible to finance a large deficit by persuading consumers and business concerns to reduce their spending by the amount of the Federal deficit and lend the money not spent to the government. Instead, unless some system of compulsory lending is adopted, the government is certain to be borrowing from the banking system and causing the creation of large amounts of bank-money, and also to be borrowing existing funds which would otherwise be lying idle.

When the government spends this newly created money, or these otherwise idle funds, its purchases not only divert a large flow of goods from other

uses; in addition, they swell private incomes, and augment private spending. The spending and re-spending out of the increased incomes is apt to be greater in amount than the original deficit spending by the government. If the public spending and the resulting increased private spending occur when there is mass unemployment, the primary effect may be to increase production and employment, but at a time of full employment the result is inflationary.³

Measures to Control Inflation

During the last five months of 1950, the Congress enacted laws increasing individual and corporate income taxes, thus reducing the spendable income of individuals and corporations. The Board of Governors of the Federal Reserve System increased minimum required down payments on purchases of consumers' durable goods, and on house purchases, and shortened the period within which such loans must be repaid. These actions operated to discourage consumer purchases of durable goods and houses. Federal Reserve authorities also took steps which tightened

³ It is conceivable that there could be inflation which had its roots in no Federal deficit whatever. Private demand alone, even without having been pent up by direct controls, could conceivably swell enough to create an excess of purchasing over the total capacity of the economic system to supply the goods and services, thus causing rising prices. For example, the marked though gradual rise in prices from 1896 to 1913 occurred during a long period of balanced budgets. However, private demand alone is never apt to be more than moderately in excess of maximum possible production, and a sudden and severe rise in prices — the only kind which is usually called inflation — is virtually certain to be associated with government deficit.

² The process of creating money — often called credit expansion — is too complex to permit its discussion in this article.

somewhat the availability of bank credit for business loans. Federal authorities prohibited certain types of civilian construction.

These and other less important measures⁴ undoubtedly had a salutary effect on inflationary pressures by restricting spending. But it is clear that at best they were no more than enough to hold in check the inflationary pressures which had developed during 1950. If no further increase in inflationary pressures were in prospect for 1951, these measures might have been sufficient to hold prices at the level they had reached in January — or possibly even

⁴ The measures were the following: (1) The Revenue Act of 1950, which became law on August 28, increased tax rates on individual incomes and on corporate profits, and levied excise taxes on television sets and deep freezers; (2) Regulation W, which was issued by the Board of Governors of the Federal Reserve System, prescribed minimum down payments on the purchase of consumer durable goods, and maximum periods for loans on such purchases, effective September 18; its terms were tightened effective October 16; (3) Regulation X, issued by the Board of Governors on October 10, prescribed minimum down payments and maximum maturities for loans for new construction; (4) The Board of Governors raised rediscount rates, took other steps to tighten the money market, and in December announced increases of 2 percent in the reserve requirements of member banks on demand deposits and 1 percent on time deposits, effective in two steps during January, 1951; (5) An act enacted in December levied a tax upon corporate profits in excess of 85 percent of those during a base period; (6) Federal authorities directly prohibited certain types of nonessential civilian construction. This last measure is anti-inflationary, in that it will probably curtail total demand for materials and labor somewhat. The regulations which have been issued establishing allocations and priorities for defense orders are not primarily anti-inflationary, though they may to some extent lessen competitive bidding for materials and products.

to cause revocation of some of the speculative price increases at retail which were made in January. But in the absence of further measures, it seems clear that the increasing flow of public and business spending, and the resulting increase in consumer income and spending, will bring further inflation.

Possible Alternatives

Three courses are possible in a period of inflation:

(1) The inflation may be permitted to proceed.

(2) Price and wage controls and rationing may be used, to dam up excess demand and *suppress* inflation. The inflationary pressure will still exist.

(3) The inflationary pressure may be reduced or eliminated by monetary and fiscal measures (discussed later) which eliminate part or all of the excess demand.

There are no other alternatives.⁵ The country may choose the second or third course, or a combination of the two. If it chooses neither, inflation will proceed.

Inflation as a deliberate choice needs little discussion; it is not seriously advocated by any responsible leader as a national policy. The hardships and inequities of inflation, and its interferences with efficient production, are notorious. Low-income consumers may suffer severely. Speculative hoarding deprives producers of materials, thus

⁵ Except that certain direct controls may also be used to reduce excess demand; for example, certain types of construction may be expressly prohibited. The major weapon for regulation of the level of aggregate demand is, however, fiscal-monetary policy.

interfering with production, and overstocking of inventories in self-defense by producers who can get hold of them makes the situation worse for other producers. Established markets may become disorganized. A mild inflation — a gently rising price level — may, it is true, draw out a high volume of output, which the country now needs. But a vigorous inflation, not a “mild” one, threatens. The high level of output can be obtained in other ways; and even if only a “mild” inflation seemed in prospect, this also soon creates hardships and inequities, and like a mild case of typhoid fever, may refuse to remain mild.

Deliberate choice of inflation is not to be feared. What is to be feared is that economic groups hoping to gain increased income during a period of high spending may resist measures which affect their income but which are necessary to prevent inflation.

Direct Controls

Comprehensive price and wage controls, if effectively enforced, can suppress inflation. But they do not eliminate the inflationary pressure. Inflation, as has been stated, occurs because the total spending of government, plus business concerns which are expanding their plants or their inventories, plus consumers, is more than enough to buy all available goods at prevailing prices. Without price controls, this excess spending creates a “sellers’ market,” and sellers raise prices; with controls, when all the available goods have been purchased, some would-be buyers with money to spend will remain in the market, their demand unsatisfied. For consumers, in

some cases, this will result merely in inconvenience; in other cases in serious hardship. Rationing becomes necessary if the excess of spending power over the value of the available supply of goods and services is great enough so that serious scarcities and hardships result.

The inability of all producers to obtain the goods they wish to buy is equally serious — in some respects, even more serious. Interferences with production arise, similar to those occurring during severe inflation. At times a producer may be unable to obtain the supplies of raw materials or component parts needed to keep his plant in operation. For want of copper wire, production of electrical equipment may be interrupted; for want of bolts or gaskets, an assembly line producing trucks may come to a halt. Or, because one part or material cannot be obtained in time, a more expensive or less efficient material must be substituted. These occurrences not only involve hardship to the company and the workers concerned; they also mean that, at a time when it is important to the country to obtain maximum output, delays in production and reduction in output occur.

Consequently, priorities and allocation orders governing the distribution of scarce materials among producers become necessary. These if well administered may bring about a more effective distribution of scarce materials and goods than occurs under inflation. But the economic system is so complex that allocations by administrative regulation cannot produce as smooth a flow of supplies to producers needing them as does the price system when it is operating normally. Similarly, con-

sumer rationing cannot yield as satisfactory a distribution of goods among consumers as do the free choices of consumers at a time when their aggregate demand is not in excess of the aggregate supply of goods and services.

Further, as direct controls continue, cash income which cannot be spent accumulates. The longer controls continue, the greater becomes the accumulation. Not only does this growing pool of pent-up purchasing power threaten to break out into black markets; when controls are finally ended, in combination with the shortages of consumer and producer goods which have developed it may produce an inflationary surge such as occurred after World War II.

Need for Increased Taxes

Hence it is desirable to *reduce* or *eliminate* the inflationary pressures, rather than merely to suppress them by direct controls. If total spending is held within bounds, shortages requiring rationing and allocation, as well as the upward pull of spending upon prices, will be greatly reduced.

It is of course true that the lower the level to which Federal non-defense expenditures are held, the greater the amount of goods and services that will be available for other uses. But even the most rigorous economy by the Congress will not cut the non-defense budget proposed by the President by more than one or two billion dollars. And even a cut of that amount could be obtained only by cutting types of Federal expenditures which are very popular, such as those for public works, for veterans, or for agricultural pur-

poses. It is therefore certain that after all reductions in the budget which seem feasible to the Congress have been made, it will be necessary to restrict consumer and business spending if inflationary pressure is to be relieved.

At this point a question of magnitude arises. How severely must consumer spending and business spending for non-defense plant and equipment be restrained in 1951 and 1952, in order to alleviate inflationary pressures? What will happen to the nation's standard of living?

The answer, so long as the defense expenditures need not be increased beyond the figures set forth in the President's budget message, is fairly simple. In mid-1950, the economic system was not producing quite up to capacity. There were more than 3 million unemployed. Output can be increased, not only by employing say half of them, but also by increasing hours of work,⁶ by drawing added men and women into the labor force, and by the steady increase in output per man hour which goes on in our economic system year after year as a result of technological advance. It seems a reasonable estimate that the increase in output which can be achieved in these ways between mid-1950 and mid-1952 (the end of the period covered by the budget message) will be enough to meet the increase in defense needs. It will be sufficient, therefore, to hold the flow of goods and services to consumers and to business enterprises for non-

⁶ This process has begun. Unemployment is already down to about 2 million, and the average work week in manufacturing was about two hours longer in December, 1950, than a year earlier.

defense purposes to the mid-1950 level;⁷ they need not be decreased below that level, provided that it does not become necessary to increase military expenditures beyond the level now planned.

This does not mean that every individual can expect to purchase as much as he did in 1950. Workers who enter the labor force will have incomes they did not have before, and workers who work substantially longer hours than in 1950 will have substantially increased incomes. These groups will be able to make larger purchases than before. It would be wrong as well as impractical to try to prevent them from doing so. They are increasing the country's production, and must be rewarded to induce them to do so. If aggregate purchases are to be held to the 1950 level, some of us must purchase less than before, to compensate for those who are producing more and will be able to purchase more. But this reduction can consist largely of inability to purchase new homes, automobiles, and other durable goods as freely as before; it need not mean any appreciable reduction in our current level of living in other respects.

Restricting purchasing power sufficiently to hold total purchases to the 1950 level will be far from painless. It can be accomplished in part by banking measures which reduce the availability of loans to business concerns. Of course, loans will be available for approved purposes such as construction of a plant for military production, and also for many related purposes. Restriction of

business construction can also be accomplished in part by direct prohibition of specified types of nonessential construction.

During the past year, commercial banks have obtained large amounts of funds to lend to business firms by selling government bonds to Federal Reserve Banks. The amount of funds available for loan to business firms would be reduced if Federal Reserve Banks should stop purchasing government securities. This action might, however, cause the price of government securities to fall far below par; this in turn might have important effects on the financial condition of institutions such as insurance companies. Whether the desired effect could be obtained merely by letting the price of government securities fall *slightly* below par is a question to which no sure answer is possible.

Various methods of tightening bank credit have been proposed, some of which would require Congressional action. No attempt will be made in this article to discuss this complex question further, especially since a recent article in this journal has dealt at length with one aspect of it.⁸ It may merely be asserted that no measures which can reasonably be proposed in this field are apt to be enough to check inflation without the aid of additional tax measures.

For even if easy bank credit is not available, business concerns can expand their expenditures out of profits, funds available from depreciation allowances, and sale of liquid assets already on

⁷ Specific consumer goods, particularly durables, which use materials in critically short supply, will of course be available in reduced quantity or in a few cases not at all.

⁸ Raymond H. McEvoy, "The Federal Reserve-Treasury Controversy," *Current Economic Comment*, November, 1950.

hand. Consumers can expand their purchases as their incomes increase. Business and consumer *income* remaining after paying taxes must be held down if *spending* is to be held down and inflationary pressure moderated or eliminated. This can be done only by taxation or by some form of "compulsory lending," which requires payment of money to the government now, but promises repayment when the emergency is past. If repayment of the funds produces inflation when it occurs, not much has been gained; increased taxation is the sounder course.

It is clear that increased taxation of corporations can do only a small part of the job. Consumer spending must be held in check by further considerable increases in taxes on consumers. The taxation must be heavy enough to hurt. As we have noted it must be heavy enough so that the purchases of most of us are reduced below our purchases in 1950 sufficiently to compensate for the increased purchases of those entering the labor force and those producing more and hence earning much larger incomes than before.

At the cost of repetition, it is perhaps worth while to state again that if our incomes are not curtailed by increased taxation, we will not actually purchase more, for the goods will not be available; we will simply offer so large a market that retailers and producers in the absence of controls would be induced to increase prices further. With price control our spending will simply strip shelves bare so that rationing is required at the consumer level, and allocations of materials at the producer level.

It is not a matter of indifference which types of taxes are increased, to hold consumer incomes and spending in check. The choice between types of taxes will be discussed later.

Need for Direct Controls

Though enactment of increased taxes will curtail inflationary pressures, direct controls are still necessary. This is true for several reasons.

First, the increased need for certain materials and products for defense production is so great that even if total spending by consumers, business concerns, and government combined were held at a non-inflationary level, the demand for these key materials and products would be so great as to result in soaring prices for them, and for products made from them for civilian use. Therefore, even if general price controls were avoided, both control over the prices of these key materials and products and some degree of control over their use might be necessary. Copper, steel, and aluminum are examples.

Second, inflation, as has been noted, occurs from the cost side as well as from the demand side, even though excess demand may be considered the basic cause. In this period of high demand for materials and labor, wages and raw materials prices will tend to be pushed up, and general price increases will result. To prevent this "cost inflation," fairly general price controls will be needed.

Finally — and this is a consideration which has not received the attention it deserves — direct controls are an important part of a program to attain maximum output.

This fact may be made clear by considering what happened in World War II. At that time, more than 7 million persons above the estimated normal maximum number entered the labor force. Hours of work in manufacturing rose from 38 in 1940 to above 45 in 1945. These two changes combined provided the equivalent of more than 10 million workers whom we had not counted on before the war.

How was this performance achieved? The added workers entered the labor force for a variety of motives — some because their husbands were in the armed forces, some purely because of patriotism, and some for other reasons. But beyond doubt a dominating condition, without which the increase in the labor force could not have occurred, was an intense demand for their services. So avidly did the market gobble up all that could be produced, that employers in their desire to expand output were eager to hire workers beyond the peacetime retirement age, youths, and inexperienced men and women. The same influences resulted in long overtime. Without the intense demand for goods and services, which eliminated virtually all risk from the hiring of aged, young, or inexperienced workers, the expansion in employment and in output would not have occurred.

If we are to duplicate that achievement, we must re-create the super-high level of demand which brought it about.

Inflation cannot do this. For inflation is a process by which price rises destroy excess demand. Neither can fiscal-monetary measures do it. Fiscal-monetary measures prevent inflation precisely by reducing demand until it no longer has

sufficient strength to draw prices upward. But by the same token, it no longer has sufficient strength to motivate employers to recruit youths, oldsters, and additional family members into the labor force.

To draw millions of extra persons into the labor force, we must create an intense demand for their services. To do this, we must create an insatiable "sellers' market" for the products which they can produce. And the only way in which this can be done is to suppress inflation by price controls, while leaving the super-high level of demand in existence.

Fallacy of the Easy Way Out

But in using direct controls the nation must avoid the easy and lazy conclusion that with inflation apparently under control, no added burden, in the form of added taxation, is necessary. This conclusion is a fool's paradise.

The dangers of price controls have been referred to. In brief, such controls threaten inefficiencies in production, and they cause inflationary pressure to build up which may eventually wreck the stabilization program, or at best may cause severe inflation when the controls are removed. With controls in effect, we need an additional tax program stiff enough that the upward pressure of excess spending power upon prices is gentled — so that excess demand is only great enough to draw out maximum output, and not enough to cause severe shortages and threaten the stabilization program.

We must have a high level of demand, but not too high a level. "There are ditches on both sides of the road." We must avoid both.

The 1951 Tax Program

The budget presented to Congress by President Truman early in January estimated 1951-52 expenditures of the Federal government at \$71.6 billion, and receipts under present tax laws at \$55.1 billion. Expenditures are now at a rate under \$50 billion a year, but they will be rising rapidly as the defense production program gains momentum.

The President insisted that the budget must be balanced, that is, that \$16.5 billion of added tax revenue must be obtained.⁹ On February 2, he sent Congress a recommendation that tax increases to raise \$10 billion be enacted within the next several months. This legislation, he stated, will keep revenues in balance with expenditures for the time being; he will make recommendations later for further tax increases to match the rising flow of expenditures.

We need added taxation, not merely to balance Federal expenditures, but to check inflationary spending by consumers and business enterprises. Taxes higher than sufficient to balance the budget would be desirable. The President's program certainly does not ask for too much; the action taken is more apt to be "too little and too late."

On February 5, Secretary Snyder presented the details of the tax recommendations: an increase in the corporation income tax rate from 47 percent to 55 percent, to yield \$3 billion; an increase in the individual income tax rate in each bracket by four percentage points, to yield \$4 billion; and an increase in excise taxes to yield \$3

billion. He recommended that excises on alcoholic beverages, tobacco, and gasoline be raised somewhat, and that excises on automobiles and other metal-using durable consumers goods which will be in short supply be raised sharply — on automobiles to 20 percent, on other durables to 25 percent. The effect would be to increase prices of these goods at retail by roughly 10 percent.

Various other tax measures may be considered by Congress, as alternatives to these proposals or as added measures if still more revenue is to be obtained later.

A reduction in personal exemptions under the individual income tax from \$600 to \$400 would yield \$4 billion. (All estimates of yield are rough, and are rounded to the nearest billion dollars.)

The present individual income tax rate in the first bracket is 20 percent. A 4-point increase would bring it to 24 percent. A further increase of 6 points to 30 percent, with successively smaller increases in higher brackets,¹⁰ would yield an added \$4 to \$6 billion, with present exemptions. If rates were thus increased after reducing exemptions to \$400, the increased yield from the higher rates would be between \$6 and \$8 billion.

"Unsplitting" of family incomes — that is, compelling husband and wife to file a joint return,¹¹ if only one earns the income, instead of permitting each

¹⁰ Since the top rate on extremely high incomes is now 94 percent, and would be 98 percent with a 4-point increase, it would be impossible to add a further 6 points to all brackets.

¹¹ Or setting up a rate schedule which compelled them to pay the same tax as if they did file a joint return.

⁹ This is the amount of the deficit in the "conventional" budget. The "cash" deficit — a concept coming into increasing use — is \$12.7 billion.

to claim half the income — would yield \$2 billion.

As an alternative to part of this rate increase, or to "unsplitting," a "victory tax" like that of World War II might be suggested. This permits only one personal exemption for each family. A family of four, for example, would have one \$600 exemption instead of four, and would therefore pay this tax on \$1,800 of income which is at present exempt from the individual income tax. Such a tax, with a rate of 5 percent, would yield \$7 billion.

Finally — and this is a tax which may be vigorously advocated and bitterly opposed — a general sales tax of 5 percent would yield \$5 billion if food products were excluded, \$8 billion if they were included.

Even a cursory discussion of all these proposals would require a lengthy article; only a few brief comments will be offered here. One important consideration is the relative anti-inflationary effect of different types of taxes. For this purpose, the increase in the corporation income tax is the least effective of the group; corporation spending (for plant expansion and the like) will probably not be materially altered by the proposed tax increase, so that the tax will have little anti-inflationary effect. The tax may, however, be a necessary part of a program of stiff tax increases, if the entire program is to be acceptable to the people of the country.

The other major consideration which will enter into discussions of tax increases is the relative burden on various income classes. Any combination of tax increases designed to raise as much as \$16 billion of revenue will burden

lower and middle income groups heavily. This is unavoidable, for there is not enough income in the highest income groups to yield this much additional revenue under any set of taxes. Furthermore, mass spending of the lower and middle income groups must be curtailed if inflationary pressure is to be mitigated.

The reduction of personal exemptions from \$600 to \$400, or a "victory tax," would be especially burdensome on low-income families; a general sales tax would be even more so. If these proposals are to be avoided, almost all the others will have to be enacted, to yield the desired amount of revenue.

A sales tax would curtail inflationary spending somewhat more effectively than any other tax. But a sales tax, in addition to its burdensome effect on low-income families and individuals, might create another very serious problem. Under present law, price ceilings which may be placed on farm commodities depend on the prices paid by farmers for things they buy. Many farm commodities are not yet up to the level at which price ceilings may be placed upon them. (Meat, however, is already above this level.) Enactment of a sales tax would increase the prices paid by farmers, and thereby further increase the level to which farm prices must be permitted to rise before they may be controlled.

A sales tax, of course, would also increase the prices paid by urban consumers. The collective bargaining agreements which determine the wages of more than a million industrial workers now provide that wages must be raised if the cost of living rises. Any increase in industrial prices which had to be

permitted because of such wage increases would further increase the prices paid by farmers, and force a still further advance in farm price ceilings. This would further increase industrial living costs.

In this way, a sales tax might touch off an industrial-farm price spiral which would threaten to destroy any price control program. This effect could be avoided if the labor and farm groups

involved agreed to permit the exclusion of the sales tax in the computation of the prices they pay for their purchases. Without such agreement, enactment of a sales tax would be dangerous.

These considerations, among many others, must be kept in mind in evaluating the 1951 tax program, and the measures which must be taken if inflationary pressures are to be held in check from this time forward.

Farm Land Values in Illinois*

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IN ILLINOIS the dollar value per acre of farm land and buildings entered the second half of the century, January 1, 1951, at a level never before equaled. Except in the event of a quick cutback in defense expenditures, it is probable that still higher prices for farm land are ahead of us. Of course, this conclusion would have to be modified should ceiling prices for major Illinois farm products be set lower than is consistent with increases in costs of production.

By what standards shall we judge whether the price of land and buildings is too high or too low? What is the meaning of a given level of real estate prices to families seeking access to land for operation, for purchase, or for opportunity to supply mortgage loan funds?

From July 1, 1950, when the Korean conflict flared up, until early October the price of Illinois farm land increased by about 8 percent. Information made available to the author by the United States Bureau of Agricultural Economics indicates that for the period March 1 to early October, 1950, poorer land in Illinois advanced in price about 11 percent, while the price of land in the upper third of quality rose about 8 percent. It seems likely that an in-

crease of as much as 14 percent will be recorded in Illinois for the year ending March 1, 1951, bringing the average per acre to between \$190 and \$200.

How do presently attained dollar valuations of farm land in Illinois differ from those in other states? There was a time when the average value per acre of farm land and buildings in Iowa surpassed that in Illinois. That was true during the land boom of World War I and until 1935. If there has been a tendency toward a land boom since 1940, it may be said that Iowa has not shown it so strongly as has Illinois. The average prices per acre of farm land and improvements in Illinois and Iowa have been such as to give them a rank above any other states west of the Delaware River. In New Jersey, Connecticut, and Rhode Island—three states, each no larger than a handful of Illinois counties—urban influence on near-by farm real estate has been such as to make their state averages high. From the viewpoint of all but these states—especially when considered in relation to the flanking states of Indiana and Iowa—Illinois is the center of the nation's major area of high-priced land. Chart 1 shows graphically that in 1945 the largest contiguous area of high per-acre values was to be found in the Corn Belt.

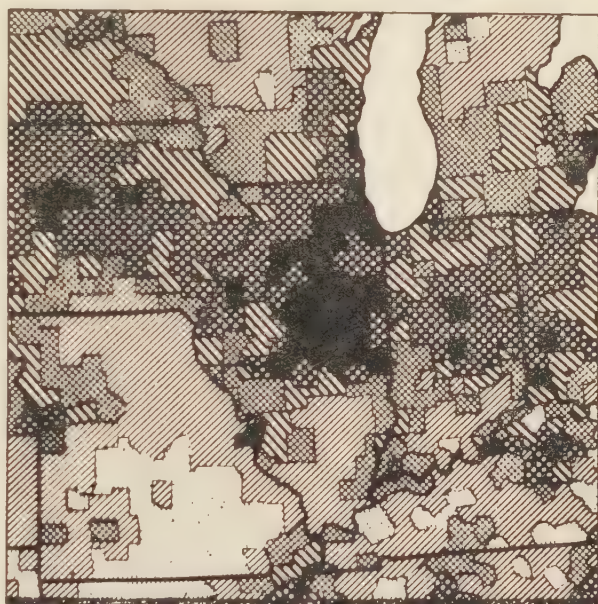
Can it be said that, since the end of 1900, "As goes Illinois, so goes the nation?" Here we must regard 1920, 1933, and possibly 1951, as significant years. For the nation as a whole, in the

* The author acknowledges valuable assistance from W. J. Foreman, Research Assistant in Agricultural Economics.

Readers of this article will be interested in the data on income payments in Illinois which are presented in the article immediately following, "Data for Regional Development."

Chart 1. Average Value per Acre of Farm Land and Buildings, Illinois and Adjoining States, January 1, 1945

DOLLARS



UNITED STATES AVERAGE

\$41

ILLINOIS AVERAGE

\$116

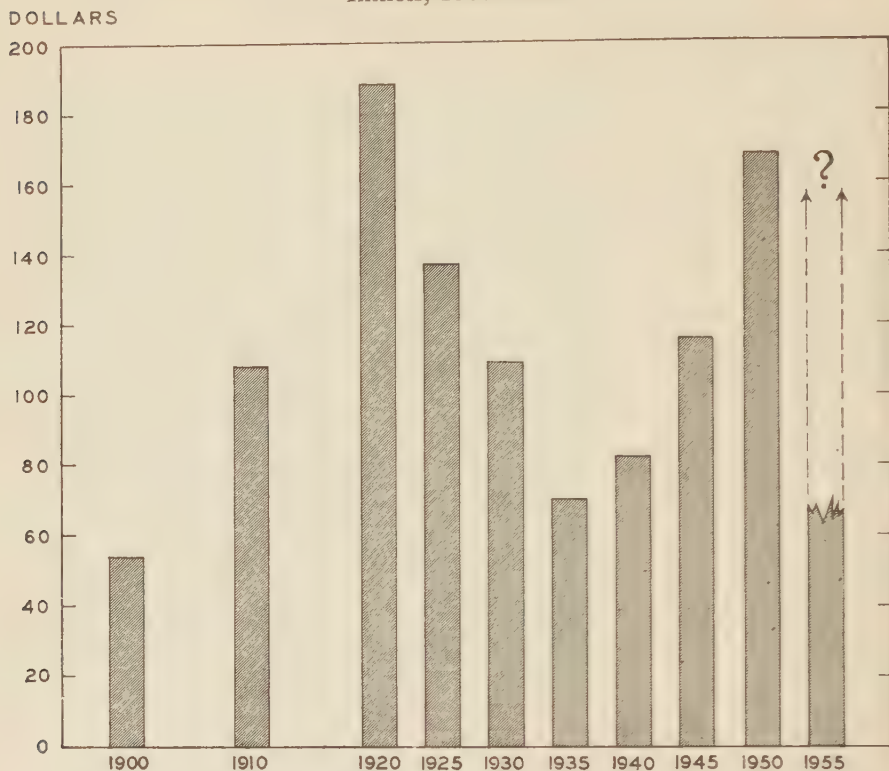
Based on *Graphic Summary of Farm Tenure in the United States*, by The U. S. Departments of Agriculture and Commerce (Washington: Government Printing Office, 1948), p. 32.

two decades ending in 1920 there was a tendency for the price per acre of land and buildings to double in the first ten years, and for the 1910 price to double in the second ten years. Illinois had a rate of increase from 1910 to 1920 lower than that for the nation as a whole, but, as Chart 2 indicates, in 1920 Illinois land attained an average valuation of \$187 an acre. By 1933 the Illinois average had dropped to \$69, but as of 1950 it is estimated to have risen to approximately \$170. The national averages have had the same

turning points in time; they have moved in the same directions; and their rates of change have been similar. Some states in the Northeast have been more stable, and some Southeastern states have shown more marked upward trends than Illinois.

What has been the pattern of change as between different parts of Illinois? Nine crop and livestock reporting districts, averaging better than eleven counties each, are recognized in Illinois. In the period of upward land price movements culminating in 1920, the

Chart 2. Average Value per Acre of Farm Land and Buildings,
Illinois, 1900-1950



U. S. Bureau of the Census.

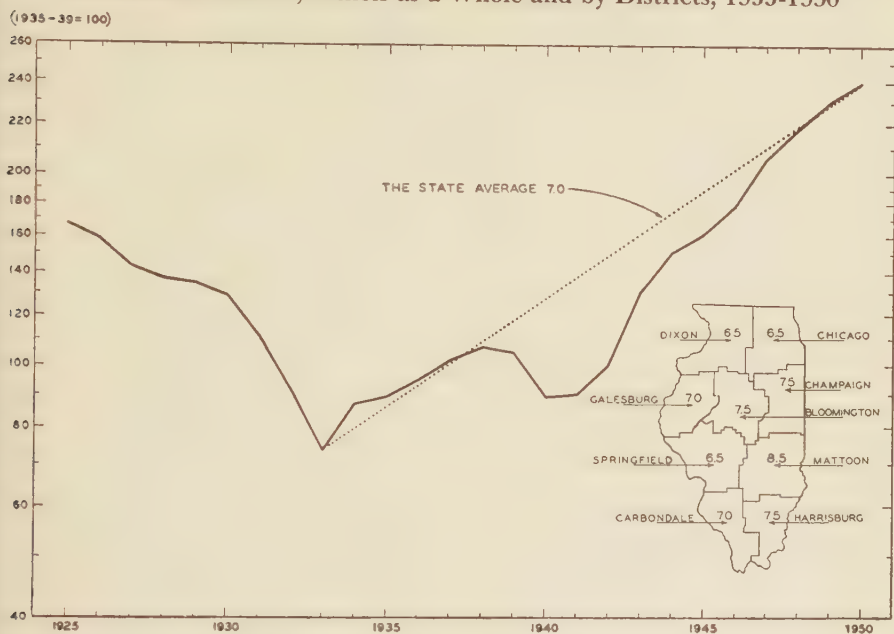
districts of central and northern Illinois outraced those in the southern part of the state. In the period of declining prices, 1920-1933, land values fell in southern Illinois relatively more than they did in central Illinois. From 1933 to 1950, the rates of recovery were more pronounced in the southern and central districts.

It may make for clarity if we compare what would be the present relative positions of a hypothetical group of persons, each of whom invested the same number of dollars in different assets in 1933. Let us suppose that the

first man bought bonds paying a high rate of interest, and not maturing or callable during the ensuing seventeen years or more. The other members of this imaginary group will be assumed to have acquired farm real estate, each piece of land a representative farm in one of the nine districts of Illinois.

These nine owners of farm lands have received their rents and by using some part of the rent have kept the improvements and the fertility level of the land equal to those of average farms in their respective areas, from 1933 to 1951, and by paying general

Chart 3. Rates of Change in Yearly Index Numbers of Value of Farm Land with Improvements, Illinois, 1925-1950, and Computed Average Compound Rates of Increase Therein, Illinois as a Whole and by Districts, 1933-1950



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property taxes have kept community services flowing and have maintained possession.

What has been the annual compound rate of increase in valuation of the farm real estate in the state and in the various districts? In other words, what rates of compound annual interest would the bonds of the non-realty-buying investor have had to bear, tax-exempt, if the interest had been reinvested in similar bonds, in order to accumulate capital values equal in 1951 to those of the farm properties? For Illinois as a whole, the answer is 7.0 percent. Chart 3 shows comparisons of these relationships for the state and for the nine recognized districts.

It will be noted that the east-south-

eastern (Mattoon) district had a rate of 8.5 percent, indicating a strong comeback from a very low 1933 level. The Bloomington, Champaign, and Harrisburg districts showed advances at the rate of 7.5 percent. For a long time there has been a tendency for farm real estate prices in the Galesburg district to approximate those in the state as a whole, and its rate was 7.0 percent. The same rate of increase was shown for the Carbondale district, although at a much lower level of prices. In the Chicago, Dixon, and Springfield districts the 17-year rate of advance was 6.5 percent per annum. Without minimizing the difference between 6.5 and 8.5 as compounding annual rates, one is impressed by the tendency for

farm land prices to move in the same direction and at similar rates in all parts of the state, as well as in the major divisions of the country.

Is there a tendency for farm land prices to leap forward on the strength of a single year of better-than-average rents or profits from farm operation, and then fall back when a single year of low rental or operational returns comes along? The answer, of course, is that a title to a farm property is for the full future; and buyers, most of whom have had some experience in the gentle art of making and saving money, are likely to realize that returns for a single unusual year must be properly discounted. It is only the short-time speculator who buys land merely as a gamble upon an early advance in its price. Even that type of speculator must realize that land buyers in the mass are guided by their judgments concerning the favorable relations they expect to persist between, let us say, five-year average net returns from farm operations — or, for the nonoperating owner, net rents — (in each case making allowance for general property taxes) and current prices which prospective sellers ask for their land and buildings. These longer views on what the net rents per \$100 of farm land and buildings may be when \$100 buys two acres, or one acre, or half an acre are the views that influence the majority of land buyers and sellers, although some in-and-out speculators may not spend much time thinking in these broader terms.

Some indication of the financial thinking of investors may be obtained from an examination of a little-used series of data collected cooperatively by

the United States Department of Agriculture and the Illinois Department of Agriculture. Although not very many farms in Illinois are rented entirely or almost entirely for cash, the state does have enough of such farms to illustrate an interesting point. In 1928 and 1929 the reported valuation of these cash-rented farms was 20.2 times the amount of reported cash rent. In the years 1930 to 1934 the ratio decreased from 18.3 to 16.6; since 1934 the ratio rose somewhat irregularly to 18.8 in 1950. In 1950 the ratio in the Carbondale district was 15.5; in the Chicago, Dixon, and Harrisburg districts it was between 16.0 and 17.0; in the Springfield district it was nearly 18.0; and in the Bloomington, Champaign, and Galesburg districts it was between 20.4 and 21.6.

These figures may imply that, as between parts of the state at a given time, or as between individual years, cash rents may have remained relatively stable while land prices advanced considerably, or that there were other non-proportional changes in rents and land values. When these ratios between 16.6 and 20.0 are expressed as percentages, the percentages range from 6 to 5. If between 5 and 6 percent of current valuations has been received as gross cash rent, it indicates that the real estate values have been adjusted rather consistently to the cash-renting landowners' income. In central Illinois the real estate valuations per dollar of cash rent from 1933 to 1950 were higher as a rule than in other parts of the state. That situation, moreover, is in line with what had previously occurred in the two decades preceding 1920.

Share rents, expressed as fractions of

the output of share-rented farms, have changed relatively little in any given part of the state. This does not mean that the dollar value of the landlord's receipts from share-rented land has been stable. The price per unit of the major farm products unites with volume of output to give a more complete indication of what has been happening to rents received by owners of share-rented farms.

An interesting detour to the goal we are seeking is afforded by a few figures showing the number of bushels of grain and the weights of livestock, at average prices for the given years, that would have been required to equal in value the price of an average acre of Illinois farm land. Chart 4 portrays these relationships for the period 1931-1950. For selected years in that period, the quantities of specific farm products required to equal in value an average acre would have been:

Product	1949-		
	1933	1940	1950
Oats, bushels	400	260	250
Corn, bushels	270	150	140
Soybeans, bushels	190	100	75
Cattle, hundredweight	11	9	7
Hogs, hundredweight	11	12	8

One notes that the amount of grain or beans or cattle or hogs required to be sold to obtain enough cash to buy an average farm acre in Illinois declined during the 1940's. The decline was especially marked in hogs, soybeans, and cattle. Between 1933 and 1940 the decrease had been notably precipitous in soybeans and corn, while hogs remained practically constant. During much of the 17-year period average yields per acre were increasing in most parts of the state. Costs of production per acre were also rising, but

in general the gross receipts per acre increased more, at least until 1947.¹

Thus, while the price of Illinois farm land was advancing at a startling rate, prices per unit of product were increasing still more. With yields also increased and costs of production per acre rising, but not in proportional measure to the increased gross returns, the income aspect of Illinois farm real estate was favorable to advances in its price.²

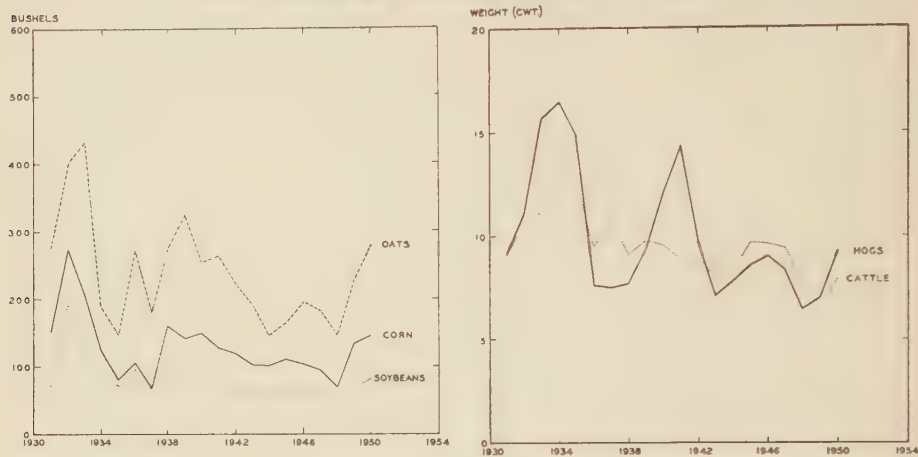
Figures for net income per acre, on either a cash or an accrual basis, are not available for all the nearly 200,000 farms in Illinois. Over a period of twenty-five years, however, net income (cash basis) figures are available for a varying number of farms which keep farm accounts in cooperation with the Department of Agricultural Economics, University of Illinois. It should be recognized that such farms are likely to be more progressive than others and that their results may not be representative of all. The farming-type areas covered are eight in number, and from the description given can be placed by the reader in their approximate location. Detailed figures are shown in the table on the next page.

In the first five-year period, 1925-1929, the net income per acre in the northern and central areas averaged

¹A. G. Mueller, F. J. Reiss, and J. B. Cunningham, "Summary of Farm Business Records on 2,674 Illinois Farms for 1949," *Illinois Farm Economics*, 189 (September, 1950), especially Table 1, page 1049.

²For a significant analysis of the behavior of Illinois farm production costs during the period 1913-1946, see R. H. Wilcox, "The Lag of Farm Costs When Prices Fall," in *Farm Appraisals Conference Papers*, 1948 (University of Illinois College of Agriculture mimeograph), pp. 69 ff.

Chart 4. Bushels of Corn, Oats, and Soybeans, and Weights of Cattle and Hogs, Required to Equal in Value the Price of an Average Acre of Farm Land, Including Buildings, Illinois, 1931-1950



Department of Agricultural Economics, University of Illinois.

about a third as high as in the period 1945-1949. The southern areas showed a relatively lower twenty-year increase in net income per acre. If the second five-year period, 1930-1934, is used as a basis of comparison with the latest

five-year period, 1945-1949, the west-central general farming area showed an increase of over fivefold; the western livestock and grain, the east-central cash grain, and the south-central mixed farming areas increases of more than

Annual Net Income (cash basis) per Acre for Illinois Account-keeping Farms, by Farming-type Areas^a

Farming-type area	1925- 1929 (avg.)	1930- 1934 (avg.)	1935- 1939 (avg.)	1940- 1944 (avg.)	1945- 1949 (avg.)	1948	1949
Chicago dairy	\$9.59	\$5.25	\$5.61	\$13.72	\$20.45	\$18.82	\$22.79
Northwestern mixed livestock	7.94	4.92	7.23	16.23	21.79	20.36	18.40
Western livestock and grain	9.05	4.86	6.99	16.93	24.16	22.31	21.56
East-central cash grain	8.91	4.46	7.15	18.15	24.25	22.76	22.21
West-central general farming	6.35	3.23	4.62	11.58	18.22	19.14	18.82
St. Louis dairy and wheat	3.26	2.03	3.32	5.79	7.77	7.08	6.68
South-central mixed farming	2.21	.91	1.96	3.47	4.57	4.28	4.93
Wabash Valley grain and livestock	4.57	1.73	3.96	6.58	7.89	7.49	7.66
State average ^b	\$7.13	\$3.74	\$5.70	\$13.51	\$17.68	\$17.76	\$17.45

^a Includes records of the Farm Bureau Management Service since its organization in 1938. For the year 1949, a total of 2,465 Farm Bureau Farm Management records and 629 extension project records were summarized.

^b Weighted by acres in each area.

fourfold each; the northwestern mixed livestock area a more than threefold increase; and the Chicago dairy area an advance of nearly threefold.

Properly, allowances were made in using both the low average income of 1930-1934 and the high average income of 1945-1949 in appraising land at low prices in the former period or at high prices in the latter. If the Census of 1950 shows an average price per acre of nearly \$170, as estimated here, that will be an advance of \$100 an acre over 1935, or between a onefold and a twofold increase. With an average net annual income of nearly \$3.74 an acre from the account-keeping farms in the state in 1930-1934, when all farms in the state had an average valuation of \$75 an acre, it might be assumed that in 1945-1949, when the account-keeping farms showed a net income of \$17.68 an acre, $4\frac{3}{4}$ times that of twenty years before, the price of farm land would average about \$355 an acre. The fact that investors so generally abstained from bidding average land to such a price provides evidence that they have questioned whether current farm earnings will be maintained.

The account-keeping farms during both periods were above the average in management and in returns received per unit of the various inputs, and doubtless above average in market valuation. If all farms could have been expected, not only in 1945-1949 but for at least the following twenty years, to continue to produce for an operator \$17 or \$18 an acre net annually, one who regarded 4 percent as a good return to receive on land investment might have been expected to bid up to \$450 per acre for the ownership of land

producing such net income. Recently, it is true, some land has sold at a price as high as or even higher than this amount. If land yielding \$24 per acre net income annually, after taxes, could be expected to continue to do so for a long future period, valuations approaching \$600 per acre would not seem out of line.

It is obvious that land prices have been storing up trouble for somebody. At one time, appraisers place values on property for the guidance of a prospective seller, or of agencies levying taxes on general property, on capital gains, or on inheritances. Later, perhaps, the property is appraised for a buyer who can pay for the land only from future earnings, or for a lending agency which depends on a part of the earnings for repayment of its loan. Valuations that are suitable for the former group of purposes may be much higher than accord with the needs of the latter group of clients. How can the disparity between time-honored normal values and the very high current market prices be reconciled, except as more weight is given to the persistently higher sales prices of farm products?

If, on the other hand, Federal and other agencies promoting farm ownership go along with the higher prices for farm real estate, many buyers will be saddling themselves with debts beyond those which have been carried comfortably in the past. The number of years required to pay off such debts is increased, and the hazards of encountering a series of years of low farm returns, which may deprive the buyers of power to carry on without loss of savings, are enhanced.

More plainly observed in Europe

than in North America has been a cyclical tendency for farm mortgage debts to expand in a period of rising prices; then to decline, with many high-debt purchasers losing their equities; to level off as farm incomes increase for a period; and finally to return to the top, after a period of prolonged high earnings, for another trip down the toboggan slide.

In order for advancing farm real estate prices of the period from 1896 to 1920 to be equaled in length of

elapsed time following 1933, at least five more years would be required. There is, of course, no likelihood that the present upward trend will continue for a period of exactly the same duration as that which culminated in 1920. Extra layers of valuation are now being placed on top of those of the later 1940's. One must have great faith in the maintenance of high net earnings over the next two or more decades to conclude that these very high valuations will continue.

Data for Regional Development

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and

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DURING THE PAST DECADES, economists and statisticians have accumulated a wealth of data on all types of economic activity. We have data on production in different industries; data on sales of various goods and services; data on employment and payrolls; data on deposits and loans; data on construction contracts awarded and on all kinds of price movements. While there has been a constant addition to this vast amount of information, there has been a concomitant concern to find a proper conceptual framework which would make the analysis of these data more meaningful.

For the national economy as a whole, a system of national income accounting has served as a new conceptual framework to relate the detailed data so as to reveal their relative influence and weight in the aggregate economy. Movements in personal income and total output tell us something about the relative effect of the multitudinous individual components of the national economy on the well-being of the nation as a whole. National income data tell sales managers and market analysts something about the effective demand for their products. National income also serves as a measure of "economic welfare," by indicating how much progress has been made over the years in increasing the goods and services avail-

able to the citizens of the nation. Finally, and most importantly, national income accounting has become a powerful tool of analysis in ascertaining some of the reasons for changes in our well-being. It tells us the factors of strategic importance in any downturn of business activity, as well as those which tend to strengthen the national economy.

On the regional and state level, a similar conceptual framework of aggregate income accounting is not yet available. Yet here, just as for the nation as a whole, the need for a better understanding of how the individual data are interrelated has been felt keenly by all students of regional development. Some preliminary attempts have been made to measure income payments and their trend in the different parts of the national economy.

Income Payments in Illinois

The United States Department of Commerce publishes annually a series of state income payments, which has become the most widely used general index to measure shifts in the geographic distribution of our national income. As would be expected, the data for Illinois indicate the leading role of that state in the national economy. Total as well as per capita income payments in Illinois rank consistently

near the top. In 1949, Illinois income payments made up slightly more than 7 percent of total national income, ranking Illinois fourth among the states of the union, following New York, California, and Pennsylvania. In terms of per capita income, Illinois ranked sixth, following the District of Columbia, New York, Nevada, Delaware, and California. Residents of Illinois received an average income of \$1,618 in 1949, as contrasted with a per capita income of \$1,330 for the United States as a whole.

Although these data point up the position of economic leadership held by Illinois, state income estimates also emphasize the relative growth of other parts of the nation which are in the process of catching up with the industrial development of the older manufacturing centers. Twenty years ago 8.52 percent of total national income was paid out in Illinois; by 1949 this ratio had dropped to 7.14 percent. Or, to put it somewhat differently, while national income was increasing by 139 percent over the last two decades, Illinois income just doubled.

As to per capita income, the relative shifts for Illinois over the past two decades may be noted in the following tabulation, wherein Illinois per capita income is shown as a percentage of United States per capita income for each year.

<i>Year</i>	<i>Percent of U.S.</i>	<i>Year</i>	<i>Percent of U.S.</i>
1929.....	137	1936.....	119
1930.....	130	1937.....	123
1931.....	125	1938.....	121
1932.....	120	1939.....	124
1933.....	117	1940.....	126
1934.....	116	1941.....	126
1935.....	118	1942.....	119

<i>Year</i>	<i>Percent of U.S.</i>	<i>Year</i>	<i>Percent of U.S.</i>
1943.....	116	1947.....	118
1944.....	116	1948.....	124
1945.....	119	1949.....	122
1946.....	121		

In 1929, expressed in these terms, Illinois per capita income amounted to 137; in other words, Illinois residents had a per capita income 37 percent higher than the national average. In 1949, this relative advantage had been whittled down to 122, meaning that Illinois residents, while still leading, were only 22 points ahead of the rest of the country. Such comparative income decline, it should be noted, reflects in large measure the industrial growth of the newer and less-developed parts of the country. The relative leadership of the most highly industrialized parts of the country is not likely to persist over the years, as other regions come to participate more actively in the national economy. "Underdeveloped" areas should be expected to grow at a somewhat faster pace; such a differential growth of regions reflects the extent to which low-income areas have been able to increase their contribution to the national economy. Thus, the historical trend of Illinois income data should be reassuring rather than disturbing, because it shows the growth of the national economy as a whole and indicates how the very leadership of Illinois has stimulated the industrialization of other regions in the multi-part national economy.

In considering short-run changes, measures of regional and local activity tell us something about the reasons for differential shifts in cyclical movements. While national income declined by 2

percent from 1948 to 1949, before a new advance was started in 1950 and stepped up by global events, Illinois suffered at the same time an income drop of 6 percent. This decline primarily reflects the importance of agricultural income for downstate Illinois. The nationwide drop in farm receipts accounted for most of the 1949 income shifts. Department of Commerce data on income payments indicate that agricultural income in Illinois dropped 38 percent from 1948 to 1949.¹

A similar story can be told with reference to the entire postwar period. Total income payments in Illinois, as well as for the United States as a whole, increased by 16 percent from 1946 to 1949. But within Illinois this growth was the composite result of an 11 percent drop in agricultural income, compensated by a 20 percent increase of private nonfarm income and a 9 percent addition to government income payments. Among private nonfarm income components, for Illinois as well as for the nation, the most strategic growth was shown in manufacturing payrolls, which increased by 19 percent in Illinois and by 20 percent in the nation.

Regional Differences in Illinois

This picture for Illinois as a whole still averages out important differences within the state. Obviously, all Illinois

data are weighted by the heavy influence of the Chicago metropolitan area. As the readers of the *Illinois Business Review*² know only too well, there are "underdeveloped" areas within the state. For purposes of regional analysis, the most important question is whether these underdeveloped areas have grown at the rate shown by other low-income regions of the nation or whether they are seriously lagging behind. To answer this question, we need income estimates for areas smaller than the state. Several attempts have been made to develop such estimates.

Data for southern Illinois indicate that it has been an area of less than average national income for a long time. In 1939, the residents of southern Illinois, defined as the area of 44 counties belonging to the Eighth Federal Reserve District, had a per capita income amounting to 83 percent of the national average, far below the figure of 124 percent shown for the state as a whole. As pointed out before, we should expect high-income areas to lose some of their differential advantage while low-income areas catch up with the growth of the national economy. The most disturbing development within this state is therefore the relative income loss of southern Illinois. State-wide averages cover up the fact that most of the recent income growth has been in the already well-to-do areas of northern and central Illinois, rather than in the relatively less prosperous counties of southern Illinois, where per capita income in 1949 amounted to

¹ *Survey of Current Business*, August, 1950, Table 2, p. 15. It should be noted that the Department of Commerce definition of agricultural income includes the inventory revaluation resulting from price declines, and this factor is responsible for the extent of the drop indicated above. The decline in cash farm income for Illinois was not nearly so great.

² A monthly summary of business conditions for Illinois, published by the Bureau of Economic and Business Research, University of Illinois.

only 79 percent of the national average, as against 83 percent in 1939. This, of course, primarily reflects the heavy dependence of southern Illinois on coal mining, a dependence which is now gradually being overcome through local efforts to diversify the industrial structure of the region.

Striking differences in the regional development of northern and southern Illinois have long been a matter of concern and may well serve to emphasize the need for small-area income estimates. These data give some precision to the differences in the sales potential of these areas, the differences in their economic welfare, and the differences in their problems of regional development. To be useful for regional analysis and the formulation of policy alternatives, however, income data as such are not enough.

As pointed out in the beginning of this article, our interest in economic aggregates, on the national and the regional level, reflects our need for some conceptual framework to study the wealth of individual data available. This implies that the aggregate income data must be related to the structural detail in some meaningful way. It is not enough just to know that income totals have increased or decreased by a given amount. We must also know the factors contributing to these changes and their relative importance. For the nation, as well as for the region, we need to know the structure of income aggregates. For the nation, considerable industrial detail is available to show the individual industrial sources of national income. For the region, a similar breakdown of total

income payments by industrial source is needed.

This can be illustrated by referring to differences in the relative importance of manufacturing payrolls in different areas. In the United States, manufacturing payrolls amounted to 22 percent of total income payments in 1949. In Illinois, one of the leading industrial states of the nation, the proportion was 27 percent. But, obviously, the percentage figures differ widely within the state. Whereas manufacturing payrolls make up almost one-half of all income payments in the metropolitan areas of Chicago, East St. Louis, and Peoria, the figure is below 5 percent in many of the downstate areas. As was pointed out before, mining plays a strategic role in southern Illinois. In the area around West Frankfort, coal mining accounts for more than one-third of all income payments. In the Corn Belt of central Illinois, on the other hand, farm receipts account for more than one-third of the net income of most areas. Thus, a knowledge of the industrial income structure is essential for any regional analysis.

Industrial Differences

Some industries, regardless of their size, contribute more to the growth of total income than do others. "Secondary" industries often follow the lead of a "primary" industry basic to the region. Trade and service industries, by and large, reflect rather than originate the income movements of a community dependent on some strategic industry with a high "multiplier" effect. In southern Illinois, mining is a "primary" industry. With a growth in mining activities, trade and service auto-

matically follow, though the latter are not likely to exert any great independent force on the local economy if the stimulus is not received from a strategic industry "exporting" its products to other areas and thus attracting outside funds to increase the regional income flow. Trade and service industries play such a role whenever they appeal to customers from outside the area; an example is the tourist industry, which is independent of local income sources to maintain effective demand for its services. Another autonomous "industry," independent of local income, is the Federal government, whose expenditures may have a large "multiplier" effect on the regional economy.

The great interest in agriculture and manufacturing is due to the strategic roles of these two "export" industries in the local economy. Although agriculture may directly contribute only a fraction of the local income, it is the indirect source of most income accruing to any rural community dependent on the income farmers spend in trade and service industries. Thus, aggregate measurements must reflect not only the structural breakdown of income payments but also the "multiplier" effect of individual industries for the region. The strategic role of an industry is, at least partly, shown by its time lead or lag in relation to total community income. This points up the necessity of having detailed estimates at frequent intervals to indicate the relative movements of separate income components over a period. This information is also important in order to differentiate the activities which, because of their large "multiplier" effects, may lead to regional bottlenecks when defense ef-

forts in a certain area call for a large autonomous increase of expenditures. The data now available bear out the leadership of manufacturing payrolls in the long-run growth of Illinois income. For southern Illinois, mining has played a similar role in reverse, leading the downturn of this area.

Another strategic activity likely to affect all other income components is investment. Investment may take place in any industry, although it is most important for construction and for the manufacture of durable goods. Its strategic role is not due so much to its draft on "foreign" funds as to the stimulus it exerts on credit creation and labor productivity.

Therefore, the gross national product is a basic concept in analyzing the national economy; it includes data on net and gross investment because these activities are likely to have a dominant influence on the course of the total economy. Their multiplier effect is particularly large. On the national scene, therefore, an attempt is made not only to estimate past investment expenditures but also to forecast the forces shaping investment decisions, such as governmental policy and the expectations of private business. To analyze more carefully the national business account and to predict business investment plans, the Securities and Exchange Commission and the Department of Commerce are making sample studies of the anticipated plant and equipment expenditures in various industries. To estimate consumer investment plans, the Board of Governors of the Federal Reserve System is conducting an annual survey of consumer finances.

Another classification of income, into the traditional categories of wages, interest on capital, and land rent, can be useful in studying the economic efficiency of regional resource allocation. Manpower, capital equipment, and natural resources may be "mixed" in various proportions. A relatively low local price for any one of these factors suggests that there may be too much of it relative to the others. Southern Illinois (the 44 counties in the Eighth Federal Reserve District) probably has too much labor in proportion to the opportunities now offered there by nature and investment, for 1946 wages³ in southern Illinois were only 87.5 percent of those prevailing in the other two-thirds of the state (excluding metropolitan Cook County).

As agriculture is the main "export" industry of most areas in downstate Illinois, it appears of great interest to measure the adequacy of work opportunities afforded by it and the industries serving it. Distribution of net income per "equivalent farm,"⁴ by Illinois counties,⁵ is illustrated in the accompanying map. One numerical result indicates too little investment

(land + livestock + equipment) per farm, especially again in the southern third of the state. Comparing county averages, farm income was found to increase by \$19 for each additional \$100 of investment in the counties of the St. Louis Federal Reserve District as against only \$15 in the northern two-thirds belonging to the Chicago District. This does not mean that additional farm capital invested in these areas would earn 19 percent or 15 percent, respectively, for much of this investment is in land, the supply of which man cannot increase. Furthermore, the data refer to investment *per farm*, which can be increased by consolidating existing operations into larger units. That this is the better alternative is suggested by another statistical finding. Retail wages (and, therefore, probably the general wage level) increase by \$1.22 for each \$100 of investment per farm in southern Illinois, as against only 25¢ in the remainder of the state, indicating the low labor productivity in areas where very small farms prevail. In the counties where farms are too small an excess of rural labor needs to shift into other industries and to be supplied with more capital equipment in some line such as manufacturing, in which nature's limitations restrict productivity and earnings less severely.

Still another framework for national income accounting, conceived in terms of money flows, is a statement on sources and uses of funds available for consumption and investment. While the conventional income account indicates only current net income as a source of funds, the statement on sources and uses of funds adds depreciation charges and other nonfinancial

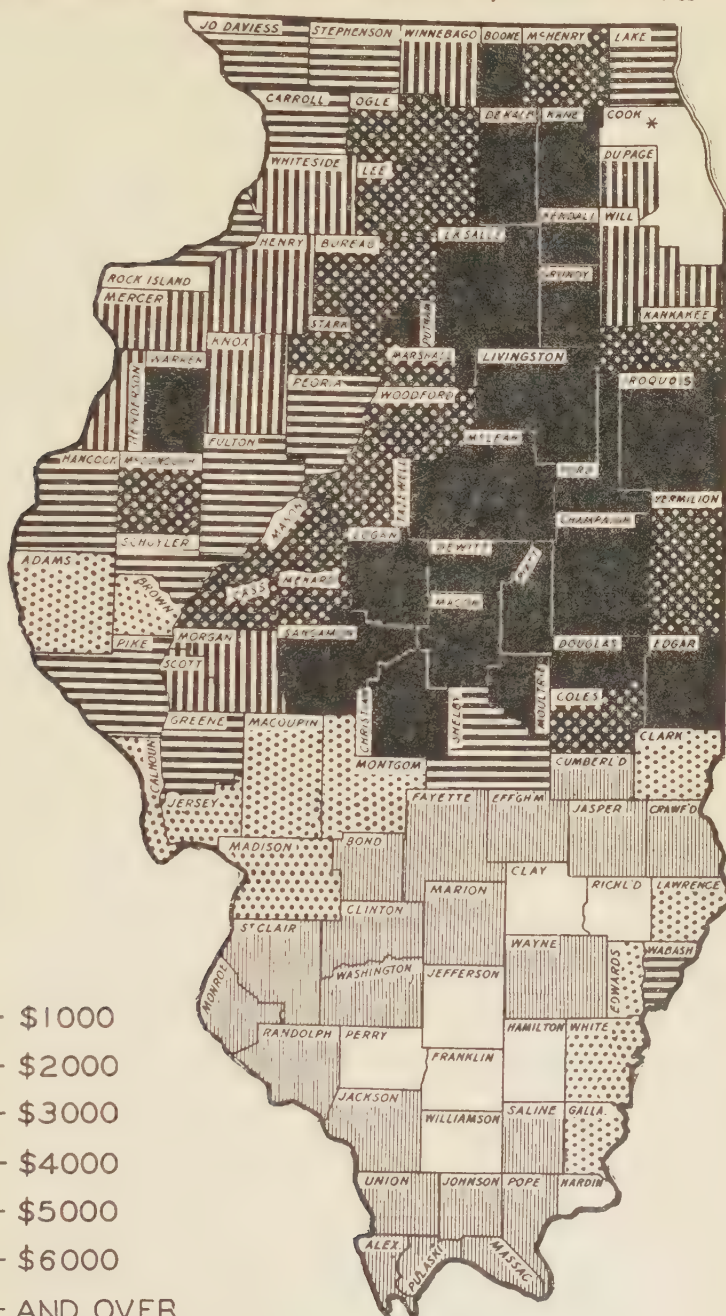
³ In retail trade—the only industrial group for which the Social Security Board publishes figures pertaining to all counties.

⁴ "Equivalent farm" is a statistical concept used to avoid being misled by low incomes in part-time farming. If a man spends 150 days per year off the farm, he is considered as operating only one-half of an "equivalent farm," with other amounts of off-farm work handled proportionately.

Eliminating this factor leaves the following as the main reasons for the wide differences shown on the map: (1) size of farms; (2) quality of land; (3) amount of livestock, buildings, and machinery; and (4) farm management practices.

⁵ Except metropolitan Cook County.

Distribution of Net Income per "Equivalent Farm" by Illinois Counties



* OMITTED

Basic data from 1945 U. S. Census of Agriculture.

items to current income, as well as financial sources such as cash balances of business and new bank credit. The latter is obviously a most important source of funds to expand the current income stream; it is here that we also find the greatest inflationary potential for the national and regional economy when the new funds are not matched by an equivalent flow of goods and services.

The funds, from whatever source, are used (1) for expenditures on current account and taxes; (2) for the purchase of capital goods and inventories; or (3) for financial purposes, such as adding to liquid assets and retirement of debt. Financial uses act as a counterweight to inflationary pressures because they dispose of funds without letting them become effective in the market for goods and services; possibly such financial uses may lead to a "recession" when the effective demand falls below the potential output of the economy. Here again, national data on sources and uses of funds are much more satisfactory than the estimates available for regional and local analysis. Most of the studies now conducted provide meaningful information for the nation as a whole but tell little about any regional deviations from the national average. Efforts to indicate the sources and uses of funds by individual regions must cope with the problem of constructing a regional balance of payments.

A first attempt in this direction has been made by the Federal Reserve Bank of St. Louis. Income and expenditures on personal account have been estimated for the Eighth Federal Reserve District, including southern Illi-

nois. These data show, in 1948, a net outflow of personal funds from southern Illinois to other areas amounting to 8 percent of total income payments. Some net outflow of funds on personal account should be expected in a region which has little attraction for "foreign" visitors while its residents do some of their shopping and traveling outside. For Illinois as a whole, of course, the picture looks quite different because of the importance of Chicago as a national trade and tourist center.

Application of New Techniques to Regional Analysis

Income aggregates, their industrial structure with special emphasis on the strategic role of basic industries, their distribution among labor and capital returns, their relation to the sources and uses of investment funds—all these are tools for a better understanding of regional development and growth. Yet the region should be appraised not in isolation but rather in terms of what it contributes to the nation as a whole. When the nation is called upon to safeguard free institutions everywhere and to achieve rising standards of living for ourselves as well as for others, regional development must refer to the region as an integral part of the nation and of the world. Regional resources must be allocated so as to maximize their net addition to the national output of goods and services; little is accomplished by a mere attempt to shift resources between industries and regions without any net national gain.

To understand better the place of the region in the national and world

economy new tools are needed, more elaborate and complex than our traditional income data. These tools must disclose not only the net income for the region but also the gross income flows through it, and show the gross output of all industries in the region, as well as their input of goods and services originating in other areas. A new technique to show these gross flows has been developed under the name of input-output analysis. Though the technique is still in its very beginning, input-output relationships have been traced through the basic industries of the national economy for the years 1919, 1929, and 1939. An inter-industry relations study for the year 1947 is nearing completion.

Another project, conceived not only in terms of industrial categories but also looking toward interregional relations, attempts to show the place of a region within the national economy: the regional "input" it receives from other areas and the output it contributes to the nation. This technique is a method for organizing an array of technical and economic information to show the impact of specific policies on interregional relations and the shifts of resources called for to assure the consistency of national and regional economic development. It is hoped that some initial findings of this new technique as applied to the Midwest may be available shortly.

Is Our Fuel Supply Adequate?

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THE OUTBREAK OF WAR in Korea brought a sudden change in the outlook for competing fuels in the United States. A recent report by the National Bituminous Coal Advisory Council stated that if the same fuel patterns which developed during World War II were to recur in a future emergency, there would be an over-all increase of approximately one-fourth in national fuel requirements. Such a demand would end the intense rivalry among coal, gas, and oil which marked the months preceding Korea and could eventually mean capacity production for every feasible fuel resource in the country.

During the latter part of 1949 the coal industry found itself losing out in the fuel markets because of a prolonged labor stoppage that increased prices and curtailed deliveries. Postwar coal production had already proved to be overexpanded because of marginal, high-cost mines, needed during the war, whose output was not absorbed by the lowered fuel demands of a peacetime economy. The petroleum and gas industries, on the other hand, were also vastly expanded after World War II but seemed to have little difficulty in finding new markets.

By 1949 petroleum and natural gas together were furnishing approximately 55 percent of our total domestic fuel requirements, in contrast to the 43 percent they had contributed during the 1936-1940 period. This was a continuation of a trend that saw coal's share of

the nation's total supply of energy drop from 70 to 39 percent between 1926 and 1949. The decrease, of course, is not entirely indicative of lost coal markets. A large part of the increasing energy needs of the country, led by the growing popularity of the gasoline engine, could be met only by petroleum products.

Maximum Wartime Coal Requirements

The coal industry is now operating considerably below its 700-million-ton estimated capacity—1950 production was about 550 million tons. December production of bituminous coal was only 43 million tons, 10 million tons less than the high for 1950 set in March. This lack of significantly increased activity in the mines since the Korean war started in June has borne out the coal industry's prediction that production would not have to be stepped up to meet the demands of limited mobilization. An expanding military preparedness program, however, is expected to rescue the coal industry from its postwar decline. It remains to be seen whether the increased use of coal during a national emergency would permanently regain any of the markets lost to gas and oil.

The peak annual consumption of bituminous coal forecast by the Bituminous Coal Advisory Council in case of all-out war is 643 million tons, 13 million tons more than the record high reached during the World War II

reconversion period. Present equipment and mining facilities are said to be sufficient to fill whatever gaps might occur in our fuel supply as the result of a military semi-monopoly of petroleum products.

A serious coal shortage was averted in World War II by the early stockpiling of a 50-million-ton backlog. Further help was given by rapid underground mechanization and by emergency strip pits, which produced over 100 million tons of coal between 1942 and V-J Day. With present mining capacity as great as it was in 1941, the coal industry should again be able to build reserve stocks if it continues to operate on a 5- or 6-day week. There is much less possibility than there was in 1941, however, of offsetting large losses of manpower by further mechanization since great progress has already been made in that direction. It has been indicated, also, that emergency strip mines in some areas are near exhaustion and will be inadequate to play the same role they played in World War II, but the industry expects new and more efficient deep mines to offset this deficiency.

Although government fuel experts are confident that there will be enough coal for full industrial mobilization, manpower or freight car shortages may cause trouble. Serious spot shortages of coal cars already exist and are attributed by the coal industry to their use for the transportation of other materials.

Major Coal Consumers

The iron and steel industry, the nation's largest single user of fuel, accounted for one-third of the energy

used in manufacturing in 1947. A major proportion of this energy was provided by coke, the only fuel applicable to the reduction of iron ore into pig iron. The manufacture of this indispensable commodity is one of the few markets the coal industry has had no fear of losing. The coke ovens were the only large consumer of coal that did not report a decline in coal use in 1949.

The nation's steel industry, already operating at capacity levels, is even now barely getting enough coke with all available coke manufacturing facilities in use. New blast furnaces built to meet increasing wartime demand for steel would require new coke ovens to fuel them. Increased coke supplies will also require rebuilding the more than half of existing by-product coke ovens which are overage and beginning to deteriorate.

Assuming that such a rebuilding program will be nearing completion by 1952, coke ovens and steel and rolling mills are expected to be using 125 million tons of coal, an 11 percent increase over their 1950 total and a maximum coal use second only to that predicted for public utilities.

Railroad use of fuels in a wartime economy would be materially different from their peacetime trend, which would have ended in saturation use of Diesel engines in jobs for which they are best suited and a total coal consumption of only 25 million tons. Before the coke ovens replaced the railroads as the nation's largest single coal consumer, annual railroad coal consumption exceeded 100 million tons, often more than 25 percent of total coal production.

In anticipation of large increases in railroad traffic and a scarcity of Diesel fuel, the dismantling of steam engines has stopped. The practical limit of the amount of coal required by railroads during a national emergency may be the full burning capacity of available locomotives. In mid-1950 the railroads had only 67 percent of the coal-burning tractive effort which was available in 1944. The maximum annual requirement of coal for Class I railways would probably be about 85 million tons, a reduction of 47 million tons from the World War II peak.

The coal industry had expected that the rapid postwar growth of public utilities would provide a greatly expanded outlet for coal but, because of uncertain coal supplies and low-cost residual imports in 1949, a large number of utilities incorporated oil-burning facilities in order to be able to switch to whichever fuel was most readily available or cheapest. By the fall of 1950, however, large Eastern utilities were swinging back to the use of coal, after almost a year of utilizing large quantities of fuel oil for power production.

It is expected that utilities will have increased their 1948 capacity 45 percent by 1952 unless materials shortages stop their construction. Maximum utility coal requirements could go as high as 134 million tons of bituminous coal, a big jump from the 80 million tons used in 1949 and 20 percent of the predicted national total.

The use of coal in manufacturing (excluding iron and steel) and for miscellaneous purposes reached its peak in 1943 at 147 million tons. The amount of power used per manufacturing

worker has been increasing since 1939 and additional workers required for war production would further increase the use of fuel by industry. A high of 150 million tons of coal is expected for this group of consumers if we become involved in a global war. Coal would become increasingly important as the primary source of heat for industry, with local manufacturers finding it more and more difficult to obtain either oil or gas.

As in World War II, coal will probably be called upon to bear the load of the civilian fuel supply as military needs for petroleum expand and imports of fuel oil diminish. It has been predicted that an all-out war would mean that at least a 20-million-ton equivalent of the facilities recently converted to fuel oil by industrial concerns would have to be reconverted to coal. There would also probably be some reconversion to coal among retail users, whose peak wartime consumption is expected to hit 110 million tons, 22 percent more than they burned in 1949.

Enormous Wartime Demand for Oil

A prolonged global war would skyrocket United States consumption of oil to a point without parallel in history. Today's semi-war economy is already reflected in a growing military need for petroleum, and increased demand is also expected from industrial plants engaged in turning out military supplies.

Almost immediately after the beginning of the Korean war, demand for both residual and light fuel oils jumped above the level of the past two years. By October Midwest refineries were processing 200,000 barrels a day more

crude oil than they were at the same time the previous year. The steadily increasing requirements of our defense program, added to the high civilian consumption levels, have already created a shortage of military aviation gasoline that has resulted in a government order for a cut in the use of tetraethyl lead in automobile gasoline.

Domestic demand for gasoline in the first nine months of 1950 was about 8.5 percent above the comparable period in 1949, a rise identical with the increase of automobile and truck registrations. The year-to-year advance in civilian consumption of petroleum products is likely to be further pushed up in 1951 by the recent increases in installations of oil-burning equipment in homes and factories.

An accurate measurement of potential wartime demand for oil is impossible, but its scope may be indicated by the fact that by the end of World War II the tonnage of oil and its products was twice the combined tonnage of all other cargoes sent to our forces overseas.

Although the oil industry cannot be sure that its reserves and facilities will be adequate to meet future requirements, it faces the emergency far better prepared for war than it was in 1941. Since the peak of World War II, the United States oil-producing and refining capacities have increased 25 percent. America alone is now using more petroleum products than were used by the entire world only ten years ago, yet because its additions to proved reserves have far exceeded consumption, the oil industry has the largest underground reserves in its history.

Each year since the end of World

War II domestic demand for oil has risen to new highs. At the present time the nation's oil production is running over 6 million barrels a day and there are about 240 million barrels of crude oil and 100 million barrels of gasoline in storage. There was an estimated 11 percent increase in domestic demand for petroleum products in 1950, and a 6 percent increase has been predicted for 1951.

New records are still being established in oil-drilling activities, with 40 percent of the nation's crude oil coming from wells not in existence when the war ended. In October the oil industry announced that for the fifth consecutive year it had scheduled the investment of more than \$2 billion for the development, modernization, and expansion of its domestic facilities.

Imports of Foreign Oil

During the twelve months preceding June, 1950, the charge was widely circulated that oil imports were seriously damaging the domestic coal and oil industries. Coal interests complained that about 100 million barrels of imported residual oil were dumped on the Eastern seaboard in 1949, reducing the market for domestic coal by 25 million tons. Demands for restrictions on oil imports were expressed in terms of domestic versus foreign interests; small domestic oil producers against major international companies; and the security guaranteed the United States by home fuel supplies in contrast to the insecurity attending the use of imported oil, 75 percent of which is produced in Venezuela.

The present national emergency brought a halt to demands for higher

oil tariffs and a general recognition of the fact that foreign oil may now be vital to the nation's security. Some sources feel that it is doubtful that United States domestic resources could supply much more oil than the amount required to meet the present levels of national consumption.

Although the oil industry has stated that it is in excellent shape to fill the fuel needs of either a limited or an all-out war, 10 percent of our present supply is coming from Caribbean and Middle Eastern wells. Military authorities have already testified that they do not believe the United States has enough domestic oil for the military and essential civilian requirements of itself and its associates in the event of a major war.

Foreign oil is of increasing significance in the field of international relations. The importance of Russia's proximity to the prolific Middle Eastern oil pools cannot be overestimated. Possession of this military prize would more than triple Russian oil supplies. Although the United States produces about 52 percent of the total world supply of crude oil, we would find it very difficult to fill the oil requirements of Western Europe if it were cut off from its Middle Eastern source of supply.

Natural Gas Still Expanding

Since the end of the war, natural gas has been cutting into markets for oil, coal, and to a limited extent for electricity. The percentage of the over-all consumption of energy in the United States provided by gas increased substantially in 1949 at the expense of both

bituminous coal and residual oil, whose proportions declined.

Although there seemed to be no limit to the postwar demand for gas, there was definitely a limited ability of pipeline systems to deliver it. New long-distance pipelines by the score were planned, financed, and built. By the end of 1950 postwar gas projects will have cost \$4 billion, with \$1 billion or more spent in 1950 alone. Today only New England and the Pacific Northwest lack natural gas service.

Natural gas utility sales more than doubled between 1940 and 1949 and are still rising. A market for 4 trillion cubic feet is expected by 1952, as compared with 3.1 trillion cubic feet consumed in 1949. About 80 percent of new pipeline deliveries will probably be equally divided between the West Central states and the Eastern seaboard, with the Chicago-Midwest area the heaviest concentration point.

The gas industry is currently discovering twice as many cubic feet of gas reserves each year as the public consumes. Total reserves of 180 trillion cubic feet of gas indicate little or no possibility that our supplies of natural gas will be exhausted in the near future, regardless of the size of increasing demand. It is possible, however, that existing gas distribution will be cut by the conversion of Southwestern pipelines from natural gas to oil for the seaboard refineries if the coastwise movements of oil tankers are restricted.

Natural gas has generally been considered too valuable a fuel to compete with cheap oil and coal for steam power. About 70 percent of all gas used for fuel is consumed in industry. Should a serious emergency develop, it is very

likely that the pattern of the last war will be repeated and expansion of non-essential gas uses will cease. Curtailment of domestic gas installations will permit diversion of natural gas deliveries to war production, primarily to the steel industry to supplement coke-oven and manufactured gases, both widely used in the production of ingot steel and semi-finished steel shapes.

Possible Emergency Fuel Resources

Developments in the field of atomic energy may some day upset all present calculations for usage of coal, oil, and gas. The Bituminous Coal Institute expects that eventually atomic power will be applied commercially to the manufacture of electricity by large central stations and by power plants in remote locations where commercial fuels are not readily available. It now seems unlikely that atomic energy will be applicable to such minor power uses as railroad and automobile engines, although it may become feasible for use by ships at sea.

In case of a prolonged state of war, long-run research on atomic power may be speeded up. Work is already in progress on the direct conversion of atomic energy into electricity without the use of boilers or steam-driven dynamos. University of Chicago scientists have developed a device using atomic bombardment to heat a series of dissimilar metals which release alpha particles to generate minute charges of electrical energy. Such research, however, is in the beginning stages and is unlikely to be useful during the present emergency.

Several more immediate fuel resources are being investigated by the

Federal government in its search for a method of obtaining the less abundant fuels from coal, which constitutes nearly 90 percent of the potentially recoverable fuel reserves in the United States. In Alabama, the Bureau of Mines is experimenting with the burning of unmined coal under controlled conditions to produce gases that will provide low-cost fuel for generating electric power.

At Louisiana, Missouri, a plant has been completed to process coal into oil by gasifying pulverized coal and converting the gas into liquid fuel. The end products of this process, which is parallel to the catalytic cracking of oil, are solid smokeless char about the same size as crushed coal; liquid fuels; and fuel gas suitable for utility distribution. The residual char could be used by the steel industry in the production of metallurgical coke, and could also be briquetted into solid fuel for domestic use.

A second demonstration plant at Louisiana is carrying out a project of coal hydrogenation for the production of gasoline and valuable industrial chemicals. This plant reported in November that for the first time it had produced gasoline from coal in practical quantities. By reducing coal to a semi-liquid state and adding hydrogen under pressure, gasoline has been produced in the plant at rates up to 9,000 gallons a day. Preliminary estimates indicate that production costs will be within reason and not much higher than those for producing gasoline from petroleum.

A more direct source of oil would be from oil shale deposits, but processes so far developed for its recovery would

cost more than obtaining gasoline from coal. An experimental mining and refining plant in Colorado, however, has reported that Rocky Mountain shale could yield an estimated 100 billion barrels of oil, more than this country has ever produced from natural petroleum deposits.

During a national emergency such projects are likely to receive the same impetus given to the development of

synthetic rubber during the last war, when cost became secondary to obtaining essential materials. If any one of these processes proves to be practical for large-scale operations, the United States could achieve complete independence of foreign sources of petroleum and would be able to meet this country's normal oil requirements for centuries after all natural oil reserves are exhausted.

The Progressive Miners of America. II

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THE CURRENT NATIONAL EMERGENCY emphasizes the importance of harmonious relations between labor and management. It gives significance to the search for insight into this relationship in times of strike and lockout, as well as in the intervals of industrial peace. The experience of the individual union which has taken part in a recent dispute therefore is of interest in so far as it can increase general understanding of such conflict in the future.

For almost two decades a dispute between the Progressive Mine Workers of America and the United Mine Workers of America has intermittently disrupted labor relations in the coal fields of Illinois. It affords abundant evidence on the subject of labor conflict growing out of a jurisdictional dispute. The previous issue of *Current Economic Comment* contained a discussion of the causes for the formation of the Progressive Mine Workers of America as a union rival to John L. Lewis's Mine Workers.¹ The present article will analyze several techniques which the two unions have used in their struggle for power and will attempt to indicate whether the use of such techniques prolonged the conflict.

Only the years 1932-38 will be discussed herein because since then neither union has introduced any essentially new techniques. The relationship since 1938 has been one of slow attrition, in

which each union has taken every opportunity to reduce the other's hold among the miners of Illinois but neither has resorted to the more dramatic measures which characterized the warfare of the earlier years. During these first seven years the choice of techniques was dictated by the needs of the moment but was colored continuously by the fact that the rivalry was between organizations of unequal strength. The Progressive union was always overshadowed by a larger rival, whose relative power has grown steadily since the low point of 1932. The major techniques to be discussed are:

1. A strike, supported by picketing
2. The use of propaganda
3. Reliance on the loyalty of the family group
4. Reliance on a contract
5. Play for governmental support
6. Resort to Federal labor boards
7. Coercion of operators

A Strike

On September 1, 1932, a group of United Mine Workers in District 12 (Illinois) voted to withdraw from Lewis's organization and to found a new union, the Progressive Miners of America.² The men took this step as an extreme protest against being bound by a contract which the officers of the UMWA had signed a fortnight earlier

¹ Harriet D. Hudson, "The Progressive Miners of America," *Current Economic Comment*, November, 1950, pp. 13-25.

² The Progressive Miners of America changed its name to Progressive Mine Workers of America when it affiliated with the American Federation of Labor in 1938.

with members of the Illinois Coal Operators' Association. They despised the agreement for two reasons: it called for a cut in wage rates, and Lewis and his officers had accepted it without obtaining the members' consent.

The new union immediately called on all miners in Illinois to strike for recognition of the Progressive Miners of America. These same men had been called out on strike on March 31, 1932, by the UMWA when its old contract expired, and some of them had refused to heed the UMWA's back-to-work order on August 16. Wherever a majority of the men at a mine decided to join the revolt, they shifted the affiliation of their local from the UMWA to the Progressive union. A vote to become Progressives was automatically a vote to go on strike for recognition. In some mines there was a lapse of only a few days between the miners' going on strike and their returning to work under some form of recognition from the employer. During these early months the union little foresaw that some companies would never grant recognition to the PMA. Many men who voted to leave the UMWA and join the new organization would never again be employed as coal miners.

Wherever strikers' demands for recognition failed to discourage an employer from reopening his mine with substitute work crews, the PMA placed pickets at the mine. During the autumn and early winter, picketing occurred at mines located as far south as Randolph County and as far north as Peoria. Before the end of 1933 picketing hindered operations in Saline and Franklin counties also. The union had no difficulty in recruiting large numbers of men for

its picket lines, because the ranks of the strikers were augmented by hundreds of unemployed miners who belonged to locals which had revolted against Lewis. Each picket was motivated not only by the typical striker's feeling that he retains the right to his job even while striking, but also by the gnawing fear that if he did not regain his own job he would be unable to find another one anywhere else.

The widespread unemployment which facilitated the PMA's recruiting of pickets had the simultaneous effect of making the pickets' efforts largely futile. Many miners who had been laid off when the operators gradually cut their crews during the previous decade were so desperate for work that they cared little whether they would be labeled "strikebreakers" by the Progressives if they replaced the strikers in the mines. Fully aware of this attitude among its unemployed members, the UMWA concentrated on supplying "loyal" men to keep struck mines in operation wherever the employer was willing to uphold his contract with Lewis's officers. Such substitution of work crews had little effect on the total number of idle miners in Illinois, but it did seriously aggravate the bitterness of feeling between the members of the rival unions.

In some instances the large-scale employer could resist prolonged picketing even without the help of the UMWA in importing "strikebreakers." For example, some mines could produce an adequate tonnage of coal with fewer workers than had been working when the previous contract with the UMWA had expired. This was conspicuously true at any pit where the men had been

dividing working time. Any large company which owned mines producing the same quality of coal in different regions of the state could reassign its sales orders to a mine in an area where the Progressives were not established. The Progressives' initial program of picketing had not covered the state completely enough to forestall this kind of substitution. Had the strike occurred in a period of boom demand for coal, the Progressives would have found the operators far less able to resist the demands of the pickets. The general business depression can hardly be over-emphasized as a factor in the effect which picketing had on the duration of the strike.

The Use of Propaganda

The rival unions made extensive use of propaganda as a means of gaining support from the miners. Each union devoted many columns of the organization's official newspaper to publicizing the latest battles in the miners' warfare. The PMA organized huge pep meetings wherever there seemed any likelihood that a break with the UMWA could be effected. The UMWA, in turn, occasionally threatened members with expulsion if they attended a Progressive rally and in a few instances broke up a meeting; to picket or to carry on a competing schedule of meetings was not found necessary.

Each union developed its own slogan, which was a constantly recurring theme in all the propaganda. The Progressives established the new union rather than accept the wage contract negotiated by the UMWA. The opposition to the new pay scale was focused upon Lewis. The slogan therefore was "Down

with Lewis's wage cut!" The motto was doubly appealing because the miners wanted to believe that their wages could be protected. It was very soon obsolete, because their hopes were unjustified.

When the Progressive Miners' union was only a month old, its representatives met with a small group of operators who were willing to grant exclusive recognition to the rebel group.³ These producers set forth convincing proof of their inability to remain in operation if forced to pay a wage scale higher than the \$5.00 basic daily rate which employers of the United Mine Workers were then paying. The Progressives' officials found themselves confronting a major dilemma: acceptance of the despised \$5.00 scale agreed to by the UMWA or continuance of a strike which they realized could never win them continuance of the old rate of \$6.10. They chose a wage cut in exchange for recognition from the operators. Since that time the PMA has never pioneered in winning major improvements in the miners' wage scale; it has remained an imitator of the UMWA, by whose economic decisions it is dominated.

No longer able to stand as champions of the old \$6.10 scale, the leaders of the new union straightway abbreviated their strike cry to "Down with Lewis!" They hammered away at the miners with the message that to continue working under a contract which Lewis had imposed on them without their consent was to submit to a dictator. The right to a democratically controlled union was proclaimed as worth striking

³ See Hudson, *loc. cit.*, pp. 23ff.

for. This right itself became the keynote of the PMA's strike propaganda. In subsequent years the union's major role remained that of champion of democracy per se. The PMA has been able to point the finger of scorn at Lewis because it has conformed to the model which it set up. There can be no question that many miners have remained loyal to the Progressive union primarily because they found in their organization fair elections, free discussion of controversial questions, and the right to call a referendum if an issue could not be settled otherwise. Although the union has passed through several periods of bitter internal dissension, the rank and file typically have felt that the final decision was made in accord with the will of the majority.

The anti-Lewis sentiment found expression in the Progressives' constitutional requirements that the president of the PMA must return to work in the mines after completing one term in office and that no officer could succeed himself. Through the years these regulations were a major factor in determining the quality of the leaders who were conducting the strike against the UMWA. They were men whose terms in state office were limited by the union's laws and who therefore were relatively inexperienced. A man of outstanding ability was not apt to seek office in the union, because no long-range career was possible there. Furthermore, the ex-presidents tended to leave the union for some other white-collar job, rather than return to the pits. Therefore the union lost all possible benefit of the counsel of these experienced men.

The Progressives' taunts of "Down

with Lewis!" or "Down with dictators!" had no apparent effect on the official policy of the UMWA, although they did have significant influence among the miners. The local and district officials did not hesitate to expel members who were suspected of inciting their fellow workers to leave the UMWA. The international union held numerous locals in check by revoking charters and appointing a new set of provisional officers. Through a deal between the district and the international, District 12 surrendered its charter to Lewis early in 1933, and Lewis then set up a provisional government which has controlled the entire district ever since. Occasionally miners in District 12 have expressed resentment toward this dictatorship, but their complaints have been drowned out by members' praise for Lewis's latest gains through collective bargaining.

In direct opposition to the PMA, the United Mine Workers adopted their own propaganda line. They tried to hold the members' loyalty by publicizing a smear campaign against the rival union. While the Progressives' banners were proclaiming "Down with Lewis!" the UMWA alternately shrieked and darkly whispered "Down with the Reds!" Because persons regarded as radicals had led a rebellion in District 12 during the nineteen-twenties, the revolt of the early thirties was subject to suspicion for the same fault. The UMWA had found in 1928 that the great majority of miners in Illinois were not willing to support an organization if they thought it was Communist-dominated, and of course the operators could be counted on to oppose radicalism. Therefore the union

was sure of the pulling power of its slogan.

The UMWA did not succeed in proving that any officer of the rival union was operating under directions from the Communists. Its Red smear nevertheless did threaten the PMA's success in its campaign of organization in Illinois. It was an important factor in the new union's "purge" of officials whom the Progressives came to regard as liabilities to the prestige of the PMA. One of these was the dynamic and hard-working editor of *The Progressive Miner*. The UMWA had given extensive unfavorable publicity to his New Year's editorial for 1933. In this Editor Allard had said:

The year of 1932 was merely another 366 days wherein the silly forces of capitalism continued to run rampant over the creative and constructive forces of society — the workers. . . . The solution . . . lies in . . . the organization of the economic machinery to serve society at large instead of the privileged few.

By this far-reaching revolutionary change of private ownership of the socially necessary tools of production and distribution you abolish all inequality, injustices and usurpation of human rights.⁴

Another person who was "purged" from the PMA was the president of the Woman's Auxiliary and the union's most talented organizer. A third was a key figure in the union's largest local.⁵ Whether the fundamental conservatism of the majority of the miners would have led the PMA to rid itself

of these members if the UMWA had not continuously pressed its anti-Red propaganda is problematical.

Much of the zeal to defend the miners' "rights" died within the union even before the last of these dissident members left the organization. Within less than five years the union seems to have reached the stage of economic conservatism which characterizes many of the mature labor organizations of the United States today. The dominance of conservatives among its leaders has lessened the bitterness of conflict between the two rival unions and has been a factor in making possible the eventual period of truce, armed though it is.

Reliance on the Loyalty of the Family Group

The members of a miner's family did much to influence his choice when his local union called for votes on the joint issues of revolting from the UMWA and striking as Progressives. The PMA therefore undertook to win the support not only of the miner himself but also of his dependents.

The PMA set up a program of strike relief as soon as it called on the miners of Illinois to go out on strike against Lewis's contract. It provided relief to its neediest strikers wherever one of its locals failed to gain prompt recognition from the employer. The PMA based its program for strikers' aid on the conviction that the strike would be brief, even though bitter, and that the cost of supporting a large-scale distribution of strike benefits during the union's first months would soon be more than justified by the state-wide recognition of the PMA. How many persons received al-

⁴ *The Progressive Miner*, January 6, 1933, p. 1.

⁵ The last of the three was temporarily suspended from the union in 1939. He was charged with having collaborated with the UMWA to arrange reuniting the miners. Obviously this accusation was far removed from the issue of radicalism.

lotments is impossible to discover from the union's records, but apparently the number ran into the thousands during the first year. At the end of its first eight months, the union officially reported its outlay for relief to have been more than \$75,000.⁶

The PMA's program of relief to the striker's family served in several ways to prolong the strike. Unquestionably more than one striking miner reported for picket duty as a form of insurance that his family would remain eligible for help from the union's commissary, and a member whose determination wavered might be somewhat more loyal after finding a larger-than-usual ration in his family's relief quota. Relief allotments undoubtedly did retain in the PMA some strikers whom poverty would otherwise have forced back to work as United Mine Workers; this was not true for long, however, inasmuch as most work crews were reconstituted in struck mines before the summer of 1933. The working miner who had made heavy contributions to support a striking local came to have a very personal interest in the recognition of the PMA at that mine.

Expectations of a brief, successful strike proved groundless. Within less than four months after calling its strike, the PMA had sufficient cause for knowing that its members were facing a permanent lockout in the mines of most large operators in the state. No amount of strike relief and loyalty from the reliever's family would empower the PMA to defeat that resistance. On the other hand, for the Progressive union to have terminated its strike allotments

at this time would have been equivalent to calling off its strike. This would have been an open admission of defeat in its battle to replace the UMWA throughout Illinois, and the union refused to relinquish its faith in its ultimate success. It continued to provide some strike relief during more than five years.

As a further means of winning the support of the miner's family, the new union encouraged the organization of a Woman's Auxiliary. Wherever a local of the PMA was chartered, the organizers for the Auxiliary tried to draw the women into a chapter. The desire to belong to the Auxiliary spread quickly, and during all the difficult months of the Progressives' strike the women's organization was a tremendous rebel force. It was the women who in previous years had borne the responsibility of feeding and clothing their families while United Mine Workers' pay checks shrank, and it was they who most noisily urged revolt from the UMWA in 1932, when they felt that the officers had betrayed the rank and file. In many instances, the arguments of a determined wife were the most important factor in a man's voting to have his local union move from the UMWA to the PMA. More than one mining village which the UMWA had controlled with threats to expel any miner who connived with organizers of the PMA found later that the Woman's Auxiliary had voided those bans. The strike brought such appalling poverty to the Progressive and his family that a wife's faith in the union's cause became a tremendous factor in the striker's loyalty to the PMA. The temptation to return to work as a United Mine Worker was not easy to resist so long as the oper-

⁶ PMA, *Financial Report of . . . Secretary Treasurer*, April, 1933, p. 11.

ators were recruiting replacements for the men who remained on strike.

Reliance on a Contract

A fourth technique which the unions used in their struggle for power was reliance on a contract with the coal operators. President Lewis based the United Mine Workers' campaign on the belief that so long as he could retain a contract with the Illinois Coal Operators Association he could be sure that his organization would survive in Illinois. The ICOA included very nearly all the large coal producers in the state. In 1933 six of these companies employed more than 1,000 men each, and among these six there was one which employed more than 7,000 persons. In terms of output the Association's seven largest producers accounted for more than one-third of the total tonnage of all the state's shipping mines in 1933.⁷ The ICOA's collective agreements with District 12, UMWA, set the pattern for the contract which any other individual company in Illinois made with the union.

Throughout the autumn of 1933 Lewis had good reason to be alarmed by the shrinking control of the ICOA, as operators decided to sever old ties and affiliate with the Coal Producers' Association of Illinois. This newly formed organization was made up of companies employing only Progressives. The PMA's initial drive for recognition brought more than a fourth of Illinois' 50,000 working miners under the new union's contract before the end of 1932.

⁷ Data concerning output and number of employees compiled from Illinois Department of Mines and Minerals, *Coal Report*, 1933, Table 11, pp. 30ff.

It became all too apparent to Lewis that the Progressive union was determined to put itself in a position to supplant the UMWA when the latter's contract with the ICOA would expire on March 31, 1933. Lewis could ill afford to gamble on whether or not his rivals would succeed. He therefore made a decisive move to protect his union's hold on the employers.

On December 21, 1932, representatives of the Illinois Coal Operators Association met in Chicago with officers of District 12, UMWA, and John L. Lewis. The operators and the union formally agreed to renew the "emergency contract" for a period of two years following April 1, 1933. Renewal of a contract did not require a referendum vote of approval from the membership. Taking an additional precaution against the rise of the PMA, the conference inserted in the contract a new paragraph requiring a union shop for members of the UMWA "when available and when in the judgment of the operator the applicant is competent."⁸

The strategic value of this move was tremendous, for the contract bound the members of the Operators' Association to continue to employ men of the UMWA. So long as the parties to the contract were obligated to operate under its terms, no rival union could push Lewis out of Illinois. The Progressive union never won the opportunity to displace the UMWA when its contract expired. Calling the miners

⁸ *Wage Agreement and Working Conditions between the Illinois Coal Operators Association and the International Union UMWA and District No. 12 UMWA*, effective April 1, 1933.

out on strike to demand recognition of the PMA had left only loyal United Mine Workers in the mines controlled by the ICOA. Therefore by 1935 the new union no longer could rally Lewis's working members to strike against his control, and any state-wide referendum would have shown the PMA to be only a minority.

Play for Governmental Support

Both unions realized that there were many ways in which the government could affect the outcome of their conflict, and each tried to swing the advantage to itself. At the local level, the chief of police often proved useful as a friend in time of need. The role of the county sheriff was extremely important as a factor in the extent to which the Progressives could engage in mass demonstrations of any kind. He could regulate also the movement of "strikebreakers" and pickets into the county. Besides, he exercised appreciable discretion in pushing for the prosecution of persons thought guilty of violence. His appointment of deputies could give strong support to the union which he wanted to favor, because he could hardly avoid selecting men with a strong bias in favor of one of the rivals. Both unions, therefore, tried to have a friend in the sheriff's office.

The rival unions turned also to the state of Illinois for protection. Against the protests of the PMA, the Illinois National Guard served prolonged duty in the mine fields. The fifteen months following the split in the miners' union marked an all-time high in days of active duty for the National Guard of

Illinois.⁹ During that interval members of the Guard served a total of 83,958 man days in the mine fields, a service which cost the State of Illinois more than half a million dollars.¹⁰ The officer in charge of the National Guard in Christian County in October, 1932, described as follows one conspicuous day in the Guard's tour of duty there:

[During the morning the troops already] on duty had surrounded the crowd assembled on the square [for a Progressive rally] and had driven them into the different rooms and offices of the Court House. This crowd of over 1200 persons was held within the Court House till sorted into different groups from separate communities or towns. . . . These groups were then escorted to their automobiles and trucks by details of soldiers and directed to leave the city. In this manner practically all out of town persons had been expelled from the city by two o'clock that afternoon. A few stragglers from this gathering along with a group of striking miners again attempted to picket all working mines in the county that afternoon. These pickets, about 500 in number, were dispersed by the use of gas and the determined action of the troops with bayonets and clubs, without serious injury to anyone.¹¹

The PMA vehemently proclaimed labor's traditional dislike for the Guard's repressive handling of mass demonstrations, for the new union's determination to upset the *status quo* placed the union always in a position of resisting the National Guard.

The inauguration of a new governor, Henry Horner, gave both unions hope

⁹ C. E. Black, "From the Adjutant General," *The Illinois Guardsman*, December, 1933, p. 5.

¹⁰ *Ibid.*, p. 8. The duty was served in four counties: Christian, 58,827 days; Saline, 13,694; Sangamon, 10,095; Fulton, 1,242.

¹¹ *Ibid.*, p. 10. The Guardsmen numbered 24 officers and 413 men.

that the warfare would be ended promptly; each insisted that it would be the victor. The unions did not agree to accept any of Governor Horner's proposals for a solution. He therefore ruled that although peaceful picketing, free speech, and free assembly would be allowed, the state would consider inflammatory agitation a violation of the peace, no deputy sheriff might be hired or paid by anyone except the county, and no civilian in Christian County might carry arms.

The Illinois General Assembly intervened in the dispute by appointing a commission to investigate conditions in the state's coal fields. Six months elapsed before this group filed its formal report, and by that time it was obvious that there was no easy way to terminate the strike. The commission's estimate that there were more than twice as many miners as there were jobs in the state gave indication of the stalemate which had developed and from which the PMA has never been able to extricate itself.

Resort to Federal Labor Boards

Unemployment had continued to spread throughout the United States during all the months of the early conflict between the miners. To combat the severe depression of which unemployment was but one symptom, President Roosevelt signed the National Industrial Recovery Act on June 16, 1933. Under its Section 7(a), the right for labor to organize and bargain collectively received legal approval. The Act brought to the bituminous coal miner an almost immediate change in his union status. If he did not belong to any union on June 16, 1933, he prob-

ably soon joined the UMWA. If he had been a United Mine Worker previously, he suddenly found that his union had become a powerful body which dominated the American labor movement. If he was a member of the PMA his hopes of belonging to the union which controlled the industry were buried beneath the overwhelming growth of a rival union.

The dispatch and ingenuity which Lewis showed in staging a campaign to organize the miners mark him as an exceptional strategist, a man with tremendous power of leadership. Meanwhile the Progressives' officers were passive, bound by the statement of policy which the executive board had announced only five days before the Recovery Act went into effect: the PMA could not risk undertaking a national program at that time. Lacking in initiative, experience, and imagination, these men did not foresee that as between rival unions success would come to the one which grasped most promptly the advantage implicit in the sudden upheaval which the NIRA had brought to established relationships.

The tremendous campaign which Lewis staged among the unorganized workers has obscured the work that he was directing in District 12, but the latter program revealed the same force and initiative as account for much of his success elsewhere. He moved very quickly to gain a union shop in several large mines which had been employing Progressives under an informal agreement with their workers.

Governor Horner asked the Recovery Administration to send an impartial representative into the Illinois mine fields as soon as the Bituminous Coal

Code was made effective, on October 2, 1933. The Board sent Donald R. Richberg. His visit to Saline County, one of the trouble spots, was greeted with such a reign of terror that the Administration could never again have confidence in the PMA as a responsible union. In his formal report Richberg said in part:

No agency of government can attempt successfully to enforce even the just claims of those who are openly defying the authority of the government. . . . The conditions at Harrisburg mean either that the leaders of these miners have no control over their followers, or that they are promoting violence to accomplish their ends.¹²

Inasmuch as the contract of each union was in conformity with the Bituminous Coal Code, "any mine operated under such a contract should be free from interference." His rules to govern relations between labor and management in the coal fields of Illinois included the following: existing contracts should be respected by the unions and by the individual operators; peaceful means of self-organization should be permitted, but coercive techniques prohibited; a union or an operator should have the right to appeal to the Bituminous Coal Labor Board "for impartial . . . determination of the rights of the parties in accordance with the requirements of the law and justice."

Richberg had full legal justification for his opinion, but the Progressives railed against it. That "law and justice" could be satisfied simultaneously for the minority and the majority seemed

impossible. So long as an operator and a worker each felt that he had the right to control the same job in a mine and the two were in disagreement as to whether a United Mine Worker or a Progressive should hold that job, there was no possible agreement as to a definition of "justice."

With the Richberg Report in mind, both the Progressive Miners and the UMWA turned to the Bituminous Coal Labor Board, Division II, for help in establishing claims to jurisdiction over contested mines in the state of Illinois. With the demise of the NIRA and the establishment of the National Labor Relations Board in 1935, the unions turned to the latter board for help. The cases involved several types of problems but were alike in that they all concerned mines which were employing organized miners at the time when the case was brought to the Board. In all their decisions the two boards adhered closely to the principle which Richberg had enunciated: existing contracts should not be disturbed. This meant that there could be no overturning of the established balance of power in the industry, and the UMWA remained in a dominant position through its contract with the members of the Illinois Coal Operators' Association.

Coercion of Operators

The Boards' rulings vindicated fully Lewis's policy of protecting his union's contract with members of the ICOA. Gradually the Progressives recognized the futility of their hope to replace the UMWA. They saw that bringing men out on strike would not shake an operator's resistance so long as he could obtain sufficient numbers of strike-

¹² *United Mine Workers Journal*, November 1, 1933, pp. 3f. This gives the text of Donald R. Richberg's Report on Conditions in Illinois Coal Fields, submitted to General Hugh S. Johnson, October 17, 1933.

breakers and did not want to employ Progressives. To the operator's argument that he could not abrogate his contract with the UMWA was now added the Labor Boards' sanction of his position. Thus stymied, some Progressives resorted to intimidating the operators.

In its most violent form, this intimidation assumed the proportions of large-scale destruction of the property of coal operators or of coal carriers. Local law enforcement officers were wholly ineffectual in apprehending the offenders. During 1935, the Federal government entered Illinois to investigate complaints that there had been interference with the mails and restraint of trade. A Federal grand jury indicted forty-one defendants, thirty-six of whom were members of the Progressive Miners of America. The government listed forty-five instances in which an attempt had been made to destroy property of a company involved in the mine war. The prosecution alleged that these bombings were not isolated events but were committed by the defendants, who had acted jointly with the "common purpose of stopping coal production by means of direct methods or impeding railroad transportation."¹³ The court procedure moved slowly, so that sentences were not pronounced until the end of 1937. Each of the men who were convicted was sentenced to four years in a penitentiary and fined \$20,000.¹⁴

¹³ Facts concerning this case are taken from *United States v. Anderson et al.*, 101 F. 2d 325 (C.C.A. 7th, 1939).

¹⁴ After intricate maneuvering by the union's lawyers, the sentences were materially shortened, so that only two of the Progressives served more than sixteen months. In

The Progressive Miners were stunned by such a sentence. They had attended the court hearings in the mood almost of persons going to a show. Jostling their way into the spectators' gallery, listening day after day to charges and denials of those charges, inquisitive to know what stool pigeons and turncoats were among their neighbors who appeared on the witness stand, determined to show their loyalty to their friends among the defendants. To these persons from mining villages, fines totaling almost three-quarters of a million dollars were incomprehensible. The fact that the jury had reached its decision after deliberating for only an hour and a half violated their whole sense of justice. Their greatest bitterness, however, resulted from a feeling that persons in sympathy with the UMWA had been guilty of major crimes but had gone unconvicted. The Progressives flaunted their denial of their members' guilt by promptly nominating fourteen of the thirty-two convicted members as district officers of the PMWA.

Whatever the adequacy of the legal grounds for the court's decision, two facts seem highly significant. First, there were no more large bombings after these thirty-four men were convicted. Secondly, the strikers' completely hopeless economic situation had been one which defied solution by passive methods. That violent methods would make the operators afraid to employ

1942 the union carried the case to President Roosevelt, who issued an executive order canceling a total of \$350,000 still due in fines (PMWA, *Joint Report of the President, Vice-President and Secretary Treasurer to the Delegates Composing the . . . Constitutional Convention*, 1942, p 4).

Progressives, rather than willing to do so, was not foreseen by the Progressives who took part in the destruction.

This loss of prestige with the operators was a blow, but it was not the only cost to the PMA. The union's outlay for legal services, even before the appeal had been carried to the Circuit Court, exceeded \$100,000.¹⁵ Far worse, the members found cause to lose faith in each other, for the prevalence of stool pigeons in the union's locals had been attested repeatedly by witnesses called by both prosecution and defense. On the other hand, the trials made many Progressives more hostile than ever to the UMWA, for the latter had played an important role in the prosecution's obtaining evidence. More than willing to do all it could to damage the prestige of its rival, the older union gave unlimited assistance to the state in identifying possible suspects, in locating witnesses, and in explaining what happens at the local level in a trade union.

The facts brought out at the trials cost the union the public's good will. Seeing for the first time a composite picture of the extent to which violence had plagued some mining communities, the public was surfeited with the whole setup. It tended to lay on one union the blame for all the crimes committed in connection with the mine war, overlooking the fact that there were lawless men in both organizations. In fact, the public's previous apathy toward violence in the mining communities had allowed the use of intimidation against many individuals. The people's indifference had been somewhat pene-

trated when a fifteen-year-old daughter of a miner had been killed by a shot fired through the window of her parents' home, but they had taken no effective steps to put an end to miners' and strikers' being shot in this bitter conflict. If the public had pushed for prompt arrest and fair trial of persons thought guilty of violence against fellow miners, the intimidation probably would never have been extended to include the coercion of operators through the destruction of corporate property.

Summary and Conclusions

The use of varied techniques characterized the years of bitter conflict between the men who belonged to the Progressive Miners of America and those belonging to the United Mine Workers. Picketing was countered with the UMWA's supplying of workers to take the place of strikers. A propaganda campaign to support one union matched corresponding charges from the other union, and the Progressives were somewhat more sensitive to the import of these drives than were the United Mine Workers. The Progressive union recognized as important the attitude of the member's family and so devoted a great deal of attention to a program of strike relief and to the encouraging of a woman's auxiliary. The UMWA, enjoying the advantage of being the established union, found that reliance on a contract with a group of large-scale operators was a technique which its rival could not match for effectiveness. The government was caught in the difficult position of being unable to enforce order if the miners were intent upon violence. By refusing to upset existing contracts the two labor boards

¹⁵ PMWA, *Joint Report of . . . Executive Officers*, 1938, p. 23.

which served the coal industry after September, 1933, made the Progressives' subsequent efforts at expansion abortive. Caught in this impasse, some Progressives resorted to violent measures for coercing employers to recognize their union; the results of this program were exceedingly costly to the PMA in many ways.

This summary of the techniques which the rival union used leads to the conclusion that the strategy of the UMWA was superior. Why then has it failed to reabsorb the rebels and put an end to the jurisdictional conflict? The key to the answer is to be found in

these same techniques. The Progressives do not want to return to the area of Lewis's complete control. "Down with Lewis!" is still a powerful slogan among them. Lewis's union shop contract with the members of the Illinois Coal Operators Association has done nothing to attract back into that organization the employers who withdrew in 1932 to form the Coal Producers' Association of Illinois, which negotiates exclusively with the PMA and therefore guarantees its survival. So long as some miners and some employers continue to prefer one union and others to prefer the other, rival unionism will persist in Illinois.

The Study of Governmental Policy Formation

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IN HIS ARTICLE, "Is a Consistent Governmental Economic Policy Possible?," published in the November issue of this journal, Professor Clark Bloom raised, from the point of view and employing the data of an economist, a number of questions which all social scientists might well ponder. Those questions would remain essentially the same were Professor Bloom's query to be re-phrased by substituting for "economic policy" such alternative subjects as "foreign policy," "conservation policy," or "labor-relations policy." For the basic problem he poses is: What is the nature of the process by which *any* governmental policy is formed? This is surely a primary question for anyone who seeks to understand (or, for that matter, who seeks to influence—as some social scientists apparently feel it is their function to do—the content of) governmental policy.

Professor Bloom believes that some people operate on the assumption that ". . . it is obviously possible to know what the desirable end (or goal) [of governmental economic policy] is, that there is a single means best adapted for its attainment, and that all important segments of the population are certain therefore to support the indicated governmental activity." He does not specify who these people are, but the present writers certainly agree that they exist in considerable numbers. Our reading

of much of the present discussion of public policy indicates that it is articulated in terms of the belief that there *are* common goals which all Americans desire, and that we can "rationally" argue ourselves into substantial agreement about the nature both of the goals and of the best means for attaining them.

The announced purpose of Professor Bloom's article is "to show the unreality of this simple view," and to suggest a more realistic view of the process by which public policy is actually formed. He states his alternative view thus: ". . . any government will respond simultaneously to various groups urging varying ends upon it . . . [and] . . . will employ many means for the attainment of its multiple goals, and . . . will at no time fully satisfy any important group." The rest of his essay purports to illustrate this thesis with examples from the current discussion of governmental economic policy.

The present writers wish to record their agreement with Professor Bloom's rejection of the "simple view" of policy formation. They also wish to point out, however, that his *exposition* of his thesis (as opposed, perhaps, to the thesis itself) helps us very little in the search for a more viable view. At least these two readers are left with the impression that Professor Bloom did not, so to speak, really believe in his own

suggestions; for about the only conclusion he seems to draw is that economists ought to avoid making too sweeping generalizations about *the* economic policy that the government ought to pursue.

If, for example, he is correct in describing the policy-forming process as consisting of the clash and interaction of (in this context, economic) groups, then it is clear that social scientists must abandon the concept of "the general welfare" as the aim of government which has long been essential to their consideration of public policy. Professor Bloom does not draw the inference, but on his own showing there can be no such thing as the *general* welfare; there can only be *particular* welfares. To be sure, such particular welfares may include more or less of the population within a political community, but they can never become "general," at least in the customary sense of "universal." Indeed, groups exist (e.g., the Communist Party) which cross political boundaries of states and thus make impossible any meaningful notion of the "general" welfare of any particular state.

In the judgment of the present writers, however, the basic cause of the inadequacy of Professor Bloom's exposition lies in his failure to make clear just what he means by a "group" or by the totality of the "groups," the clash among which constitutes the process of policy formation. Thus in one place we are told that "public opinion" imposes limits upon the area within which a dictator may act just as it does upon the activity of public officials in a democracy. In another place we are informed that "government" must operate

within the "mores of the community." And in yet another place it is asserted that "Some of the many goals of individuals and groups within any nation will be intolerable to the majority [itself a group?] or to strategically placed groups within the society."

This last statement suggests that Professor Bloom's confusion about the nature of "groups" and of the whole process of policy formation is most evident in his apparent belief that "individuals" are as important in policy making as "groups." If he means it as it reads, then situations arise in which one person defeats a large number of persons. Perhaps if that person had a gun, and all other persons were weaponless, such situations might indeed arise. But is it likely that one person will invent, manufacture, and employ a weapon entirely without help from any other person? Hardly. Yet as soon as he becomes associated with any other person at any point in his attempt to achieve his desires, he is no longer (at least for policy-making purposes, which are all that concern us here) a discrete individual. He has thereby become a member of a *group*.

A far more viable formulation of this group-pressures approach to the study of policy formation is to be found in Arthur F. Bentley's seminal work, *The Process of Government*, which was first published in 1908, largely ignored for forty years, and is now undergoing a significant and widespread revival among political scientists and social scientists in general. One interesting attempt to apply it to a special body of data is to be found in Professor Charles Hardin's studies of the formation of American agricultural policy. While it

is beyond the scope of this essay to summarize the position taken in these works, the present writers suggest that Bentley and Hardin are concerned with the same general problems Professor Bloom deals with, and their writings may be examined with great profit by all social scientists.

One final aspect of Professor Bloom's analysis, we feel, is perhaps most significant of all: his penchant for reifying relations of a social order, and the confusions about the function of a social scientist which seem to accompany this tendency. Throughout his essay Professor Bloom speaks of a "consistent economic policy" as though it were actually a *thing*, an observable phenomenon. His essay seems to be concerned with explaining why one phenomenon, the economic policy which is in fact pursued by the government, differs so sharply from the other phenomenon, a "consistent economic policy." Now the only existence which any "consistent economic policy" (such as his own example of a policy to produce a "competitive economy") has is as a mental construction of a certain group of persons (in this case, professional economists) as to how the national *economy ought to be* run, or, at the margin, how it *would be* run if all the major segments of the community could "rationally" agree on its desirability. It is thus a phenomenon of quite a different kind from that of the economic system which in fact exists. It is only by regarding them as of the *same* kind that one is led into the fruitless discussion of, in these terms, the anomalous situation in which almost everyone in the community "believes in" a particular kind of economic system and yet such a

system does not exist in that community.

At this point in the argument one must ask: What is the function of economics (or, for that matter, of any social science)? Is it to describe the economic aspect of social life? Or is it to formulate standards or norms which *should* govern our economic life? If the former, then "consistent" economic systems are hardly worth the economist's serious attention. But if the purpose of economics is to impose its "principles" on the society, then those "principles" lose their "scientific" character and become the moral-political imperatives (or, more accurately, slogans) of a *group*. And such a group must take its chances, along with the groups which (as they certainly have done and will continue to do) oppose it, in the melee of the policy-forming process. This tendency to reify mental constructions is certainly no monopoly of Professor Bloom's; it is all too characteristic of social scientists in general, and it leads to no end of difficulty. Greater clarity as to the nature of their job and the nature of the various kinds of data with which they deal seems indispensable to the better performance of their job by all social scientists, regardless of the segment of the field of social activity in which they may have staked out their claims.

Where does Professor Bloom's essay leave us in the study of governmental policy formation? He makes out a very convincing case that the usual way of discussing governmental economic policy does not conform to the facts of the process by which it is actually formed. And he begins the very neces-

sary task of searching for a formula that can encompass and explain all that he observes. The group theory which he advances as the explanation, however, entails a great deal more than his exposition of it suggests. Once the exploration of this new means of analysis is opened up, the social scientist finds himself on new and difficult terrain. Despite its difficulty, however, it seems

clear that in this direction may be found a better structure for handling the data of governmental policy formation than any presently in use. Professor Bloom has helped us along the road, and it is the hope of the present writers that these comments have pressed the discussion still further. All of us can agree, however, that there is still a long distance to travel.

Rejoinder to Hagan and Ranney

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THE SCIENTIFIC STUDY of the economic aspects of social life is obviously requiring the economist to move frequently further and further from the traditionally rather narrow limits of his discipline. Among the areas from which economists hope to ferret out additional springs from which economic organization and activity emanate—and to indicate the impact thereof—is that conventionally assigned to political scientists. It was with a good deal of pleasure, therefore, that I became aware that my article “Is a Consistent Governmental Economic Policy Possible?” was the subject of critical evaluation by two political scientists—Professor Hagan and Dr. Ranney. Their comments have been stimulating, and I hope presage an additional interest on the part of political scientists in the question raised.

The comments of Professor Hagan and Dr. Ranney cover an extremely wide range. I cannot, in limited space, deal with all matters which they suggest. I should, however, like to record my views more fully in two areas.

First, the original article did not purport to describe *completely*—in scientific fashion—the process by which governmental economic policy is made. Its purpose was more modest. It was intended only to show that such policy would probably not be logically consistent in the sense of following a well-defined hierarchy of goals pursued by means well calculated to achieve these ends. It was intended only to show the

inevitability of a “mixed” governmental economic policy—“many goals pursued and many means used at one and the same time.”

Given this, of course much remains to be done. If we are to describe scientifically the course of governmental economic affairs—and if we hope to predict their future development accurately—we further need to know the precise correlations between objective phenomena (views, ideas, and the organization of individuals and groups sponsoring them) and observable results incorporated into governmental structure and action. This will require careful definition of “views” and of “groups”—and the most useful definitions will follow only after an investigation more complete than my own. I can only hope, at present, that such an investigation will be accomplished.

In the second place, consistency—in a governmental economic policy or elsewhere—is purely formal. That is, it implies only that the system not contain contradictions within itself. When this is clear, then it is obvious that there may logically be many consistent governmental economic policies, some “good,” some “bad,” depending on one’s values. But it was the point of the article that a really consistent policy will never actually exist, and that any polar system—itsself logically consistent—will need to be evaluated in terms of the compromises which it will have to make to be introduced mean-

ngfully into the governmental schema. Precisely what the nature of these compromises will be is discoverable only with a more complete political science than we now enjoy.

Nevertheless, it is certainly the prerogative of the economist *as a scientist* to explore the logical consistency of governmental policy. This he can certainly do without imposing his values upon society. It is only when he becomes an *advocate* of a particular pro-

gram — consistent or not — that he leaves the hallowed sanctuary of science. As a matter of fact, studies by economists (and others) which ferret out goals of governmental action, indicate possible contradictions therein, and point to the adequacy (or inadequacy) of the means used in the attainment of the given goals may be extremely useful in assisting a populace and its government to better serve its own purposes.

Books Reviewed

A Reconstruction of Economics. By Kenneth E. Boulding (New York: John Wiley & Sons, Inc., 1950, pp. xi, 311. \$4.50)

In his quizzical and revealing preface to *A Reconstruction of Economics*, Professor Boulding notes that, despite the book's title, "It is not particularly revolutionary; the building blocks are arranged rather differently, but the student will find most of the old blocks here." True enough, but the book is no ordinary reshuffling of economic theory—it is provocative, full of ideas and insights, and the product of a mind that is no less original for having obvious mastery of the concepts and tools of the trade.

The author states at the outset that the book is a product of his growing dissatisfaction with the present state of economic theory—a discontent that focuses at three points. Professor Boulding is concerned about the continuing failure of economics to integrate itself with the other social sciences; he criticizes the theory of the firm as deficient in capital theory; and he believes that Keynesian "macroeconomics" is incomplete on two counts: a failure to distinguish between circulation of existing assets and the creation, destruction, and accumulation of assets; and the lack of a macroeconomic theory of distribution that would jibe with the theory of employment.

Rather than merely present a bill of particulars on these charges, Professor Boulding tries to do something much more difficult but perhaps more in need of doing. He attempts to sketch a way in which economics might be inte-

grated into the general body of social science; he recasts the theory of the firm around the central concept of the balance sheet, stressing preferred asset ratios; and he begins to actually develop a macroeconomic theory of distribution and to establish a clear distinction between the exchange or payments process and the processes of production, consumption, income, and outgo. In the course of attempting "A Reconstruction of Economics" along these lines, he also conducts an incidental but expert post-mortem on much currently prevailing economic theory.

Specifically, the book is divided into two parts, "Microeconomics" and "Macroeconomics," containing nine chapters and eight chapters, respectively. This line of demarcation is not so sharp as it might seem, however, for one of the innovations in this book is the attempt to use the balance-sheet concept as a means of fusing, or at least linking, the firm and aggregative approaches. Each part also contains chapters that do not conventionally fall within either category—Chapters 1 and 2 place economic behavior within an ecological system; Chapter 17 contains some interesting observations that could be almost anywhere in the book; and several chapters or portions of chapters represent stimulating digressions.

This book contains several ideas and concepts that, in their present formulation, seem to represent genuine innovations. The importance or even the relevance of these innovations, of course, remains to be determined by their usefulness. Three or four of these new approaches, however, now seem

promising as well as intriguing. They hold promise not only as building stones but also as indicators of gaps in accepted theory and as tokens of the variety of ways in which the integration of ideas can be sought in the vast and sprawling domain of economics.

Some of these potentially useful innovations include: the consistent use of the balance-sheet concept (broadly conceived) not only to improve the theory of the firm and macroeconomic theory but also to link the two bodies of theory; the integration of price theory and banking theory, although in a rather casual and intermittent basis; the half-realized but interesting attempt to put economics into an ecological framework; and the elaborate and apparently fruitful attempt to state the beginnings of a macroeconomic theory of distribution. This attempt at least shows what is left out of our traditional distribution theory; it reveals the complexity of the problem; and it points to a plausible new approach.

This book is also notable for an astonishing number of incidental insights—seldom fully developed or exploited, but perhaps the embryos of many a future journal article or treatise. Some of these are merely asides in passing, while others are related to the main line of analysis but given a special twist that sets them apart. Such insights are found in the concept of consumption, the effect of cash dividends upon the theory of the firm, the sketch of the household as an entrepreneur, and the quicksilver criticisms of traditional marginal analysis. A classic case in point is Chapter 17, "A Concluding Note," that is surely a note but "con-

cluding" only in the sense that it comes at the end of the book. This chapter contains some provocative ideas, however tenuous their connection to the main themes of the book may be—note such headings as "Economic Cybernetics," "Secular Inflation," and "The Future of Capitalism." Incidentally, the real conclusion of the book is in the preface—a tactic that has its points.

Judged by formal standards, the book has its vulnerable spots. It is somewhat uneven, both as to content and level, and in some places it seems not quite finished. Some chapters are elegant reformulations of familiar theory; other chapters contain less glossy but strikingly original new approaches; still other chapters include somewhat strained attempts to extend the balance-sheet concept at the dictate of symmetry; and a few chapters, pages, and paragraphs reflect the author's opportunity to get in good licks in passing at ideas that seemed worth while, if not always integral to the book.

The book also touches, at one point or another, several audiences and many levels of rigor. Professor Boulding states in his preface, "This work is directed mainly at serious students of economics who have already had some moderate exposure to the subject." This offhand reference to "moderate exposure" should not be taken too literally. The bulk of the book consists of advanced economic theory, presupposing much formal training, familiarity with accepted price theory, and some practice in reading diagrams. Indeed, some of these diagrams, while to the point, are also interesting esthetically and are works of poetic imagination. Other por-

tions of the book, such as Chapter 10, "The Nature and Significance of Economic Aggregates," can be read with profit by many with a minimum of technical background. It cannot be truthfully maintained, however, that most of this book is easy reading.

The book, in short, is original, stimulating, and pathbreaking. It contains more ideas, concepts, integrating devices, and "gadgets" than are usually found in a dozen books. Although the author may not have wholly succeeded in his reconstruction of economics, he has surely shown us much about the economics to be reconstructed and he has given us a variety of building blocks and tools. The book has loose ends, ideas that are never fully stated or developed, and analogies stretched taut, but these are a small price to pay. Some of the ideas and concepts in this book may evaporate; others may become footnotes; many may be keystones of future arches; and a few may hold independent stature. Of how many books can this be said even at the moment of publication? As a repository of ideas, this book has had few counterparts in recent years. It is surely a major work.

C. ADDISON HICKMAN

Advertising Psychology and Research.

By Darrell Blaine Lucas and Stuart Henderson Britt (New York: McGraw-Hill Book Company, Inc., 1950, pp. 765. \$6.50)

This book marks the entry of another advertising psychology volume into a field that may well be sprinkled with a number of similar works during the next few years. Teachers, authors, practitioners, and publishers have all en-

gaged in a well-coordinated effort to see to it that the market for such a volume is sufficiently exploited. They should succeed because, though not neglected, the field has perhaps lacked the emphasis due it. With this and similar volumes on the psychology of advertising available for use, there should be an upsurge in offerings of this type of work in colleges and universities.

The authors undertook a sizable task in bringing together, into one volume, the treatment of the literature on this subject. As they put it, "actually, almost every one of the chapters could be expanded into a full length volume." In doing a good job of boiling down the material, they wisely omitted a detailed treatment of marketing, merchandising, media, salesmanship, and public relations.

The arrangement of the book is logical and gives evidence of considerable attention to the details included in each chapter. The book is divided into six major parts. Part I deals with the psychological objectives of advertising. Attention, interest, desire, belief, and memory are stressed as psychological devices used to make a useful and lasting impression upon the reader of advertisements.

Part II treats the ways in which psychological advertising objectives are attained through advertising appeals. Basic psychological motivations are considered and the methods of discovering effective appeals through consumer surveys are covered. This leads logically to Part III, in which the alternative techniques of presentation of the appeals and copy themes are shown. The discussion is devoted to a choice among the kinds of appeals used in ad-

vertising and the most effective media for getting the message to potential customers by means of either eye or ear.

The structure of the advertising techniques is presented in Part IV. The well-known and customary emphasis is given to layout — color, typography, headlines, illustration, size, and position of advertisements. Radio and television problems are included in this section of the book. Part V deals with the methods of measuring advertising effect — the researching into advertising psychology.

The final section, Part VI, is devoted to an evaluation of media audiences. Such factors as size of audiences, classes of people in media audiences, accumulation and duplication of audiences, and attitudes of media audiences are dealt with in detail.

One of the exceedingly desirable aspects of the book is its excellent treatment of research methods relating to the psychology of advertising. It is handled with skill and forms an excellent basis for understanding the research problems discussed in the book. The authors point out the problems encountered in measurement methods applied to advertising research. Furthermore, they explain the specific details involved in opinion ratings, recall tests, the diary method, the coincidental telephone method, recognition tests, inquiry tests, sales results tests, and audience measurements.

One of the shortcomings of all texts that have so far been published on the psychology of advertising — and this book is no exception — is the complete disregard of acquainting the reader with some elementary understanding of the role of “semantics” or “general se-

mantics” in the field of advertising psychology. A chapter or two could be used profitably to give a background for some of the basic problems in studying “communications” techniques.

On the whole, this is an excellent volume, prepared for students, teachers, and practitioners by well-qualified authors. They deserve commendation for the way in which they have attained the goals they set for themselves.

HUGH G. WALES

Strategy in Poker, Business, and War.

By John McDonald. Illustrated by R. Osborn. (New York: W. W. Norton and Company, Inc., 1950, pp. 128. \$2.50)

To write a book that is both entertaining and substantive is a very difficult task. This is particularly true when the objective is to present a mathematical theory in simplified form, as is the case with the present work. Its purpose is truly a Herculean one: to interpret the so-called “theory of games” in a manner understandable to the layman.

The theory of games, the essence of which is contained in the highly mathematical *Theory of Games and Economic Behavior* by John von Neumann and Oskar Morgenstern (Princeton University Press, 1947), looks upon economic behavior as a sort of game among the various members of society, each of whom seeks to attain a certain end. The description of economic behavior then becomes a problem in strategy, and the great contribution of von Neumann and Morgenstern was to show how a theoretical framework based on poker and certain other games can be constructed to characterize

rational behavior and, ultimately, to provide solutions to practical economic problems. This approach provides a means of dealing with some of the more realistic economic problems with which the more conventional theory has been unable to cope, such as the situation of an industry dominated by a few large firms competing with each other. As yet, however, the theory is in a very rudimentary and abstract stage and, although of use in certain questions of military tactics, it is a long way from providing answers to the problems encountered in the business world.

For this reason, any person picking up the present volume with the hope of finding in it solutions to his business problems is bound to be disappointed. The main contribution of the book in a substantive sense is to rephrase various problems of strategy in terms of the theory of games. This is accomplished in four sections. The first provides a general description of poker and of the implications of the game to strategy formation. The manner in which the principles of a game such as poker, where one person's action depends in part upon the actions of his opponents, forms the basis for von Neumann's theory of games, is discussed in Part Two. How economic behavior can be incorporated into the theory of games is shown in Part Three, and the book winds up with a formulation of military and political problems as strategic games.

As expressed by the experts on the

back jacket cover, the book is "full of intelligent observation," "most interesting," "timely," "entertaining," and "Mr. Osborn's illustrations are to the point and genuinely witty." All of this is accomplished largely through the use of frequent and lengthy illustrative examples and digressions on such matters as the history of poker — not to mention Mr. Osborn's substantial contribution — and if one wants a work characterized by the above adjectives, serious consideration should be given this volume, along with such works as Thurber's "Men, Women and Dogs" and Silver's "All Women Are Wolves." The trouble with this book is that so much space has been devoted to the entertainment aspects of the theory that only the most fragmentary information is provided on what the theory is about. Occasionally, one does encounter such terms as "minimax principle," "two-person game," and "random choice," but a systematic presentation of the theory and of some of its more important ramifications, such as non-zero-sum games, is nowhere to be found.

The book does possess the virtue of making people aware that a theory of games exists, and of showing, as has been mentioned, how certain economic problems can be phrased in terms of this theory. The material that it contains is presented well. It is therefore doubly unfortunate that so much content had to be sacrificed for the sake of readability, and needlessly so in this reviewer's opinion.

ROBERT FERBER